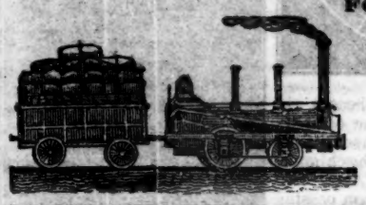
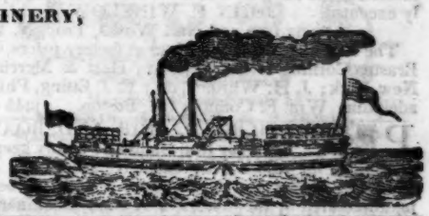
AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY, AND MINES.



ESTABLISHED 1831.



PUBLISHED WEEKLY, AT No. 23 CHAMBERS STREET, NEW YORK, AT FIVE DOLLARS PER ANNUM.

SECOND QUARTO SERIES, VOL. II., No. 3] SATURDAY, JANUARY 17, 1846. [WHOLE No. 499, VOL. XIX.

W. R. CASEY, CIVIL ENGINEER, NO. 23 Chambers street, New York, will make surveys estimates of cost and reports for railways, canals, roads, docks, wharves, dams and bridges of every description. He will also act as agent for the sale of machinery, and of patent rights for improvements to public works.

HERRON'S PATENT AMERICAN RAILWAY TRACK,

As seen stripped of the top ballasting.

HERRON'S IMPROVEMENTS IN RAILway Superstructure effect a large aggregate saving in the working expenses, and maintenance of railways, compared with the best tracks in use. This saving is effected—1st, Directly by the amount of the increased load that will be hauled by a locomotive, owing to the superior evenness of surface, of line and of joint. This gain alone may amount to 20 per cent. on the usual load of an engine.—2d, In consequence of the thorough combination, bracing, and large bearing surface of this track, it will be maintained in a better condition than any other track in use, at about one-third the expense.—3d, As action and reaction are equal, a corresponding saving of about two-thirds will be effected in the *wear* and *tear* of the *engines* and *cars*, by the *even surface* and *elastic structure* of the track.—4th, The great security to life, and less liability to accident or damage, should the engine or cars be thrown off the rails.—5th, The absence of jar and vibration, that shake down retaining walls, embankments and bridges.—6th, The great advantage of the high speed that may be safely attained, with ease of motion, reduction of noise, and consequently increased comfort to the traveller.—7th, The really *permanent* and perfect character of the Way, insuring regularity of transit. To which may be added the great increase of travel, that would be induced by the foregoing qualities to augment the revenue of the railroad.

The cost of the Patent track will depend on the quantity and cost of iron and other materials; but it will not exceed, even including the preservation of the timber, the average cost of the tracks on our principal railroads. Generally, the timber structure, fastenings and workmanship, exclusive of the cost of the iron rails, will be from $2,300 to $4,000 per mile. On this structure, rails of from 40 to 50 lbs. per yard, will be equal in effect to 60 and 70 lbs. rails laid in the usual way. The proprietors of a road, furnishing approved materials in the first instance, the undersigned will construct the track on his plan in the most perfect manner, with recent improvements, for one thousand dollars per mile. And he will farther contract to maintain said track for the period of ten years, furnishing such preserved timber and iron fastenings as may be required, and keeping said track in *perfect adjustment*, under any trade not exceeding 100,000 tons per annum, or its equivalent in passenger transportrtion, for *Two hundred dollars per mile per annum.** To insure the faithful performance of this contract, he will pledge one-fourth of the cost of construction, with the accruing interest thereon, regularly vested, until the completion of the contract. So that a company, by securing payment to the undersigned at the specified period, will have only $750 per mile to pay for the workmanship on the track, without any charge being made for the use of the patent, the subsequent payments, for maintenance of way, and amount withheld, being made from the large margin of profits that will result from its use.

JAMES HERRON.
Civil Engineer and Patentee.
No. 277 South Tenth St., Philadelphia.

* A general average of the repairs done on six of the most successful railroads in this country, for a period of from six to eight years' use has been found to exceed $625 per mile per annum, exclusive of renewal of rails. But few roads in this country carry as much as 100,000 tons per annum. When a road exceeds that quantity, the repairs due to the additional tonnage, up to 200,000 tons, will be charged at one mill per ton; over the latter, and not exceeding 300,000 tons, nine-tenths of a mill, etc. Where there are two tracks to maintain, a large reduction upon those rates will be made. 1t1

THE AMERICAN RAILROAD JOURNAL is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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S. VAIL, Speedwell Iron Works, near Morristown, N. J. (*See Adv.*)
NORRIS BROTHERS, Philadelphia Pa. (*See adv.*)
KITE'S Patent Safety Beam. (*See Adv.*)
FRENCH & BAIRD, Philadelphia, Pa. (*See Adv.*)
NEWCASTLE MANUFACTURING COMPANY, Newcastle, Del. (*See Adv.*)
ROSS WINANS, Baltimore, Md.
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PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co. Boston. ja45

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

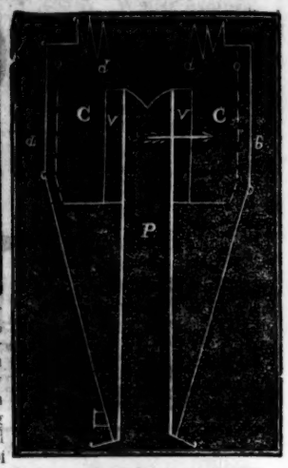
All orders directed to the Agent, Troy, N. York, will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufcturing so as to keep pace with the daily increasing demand. ja45

FRENCH AND BAIRD'S PATENT SPARK ARRESTER



TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

E. A. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, or to Messrs. Baldwin & Whitney, of this city, will be promptly executed. FRENCH & BAIRD.

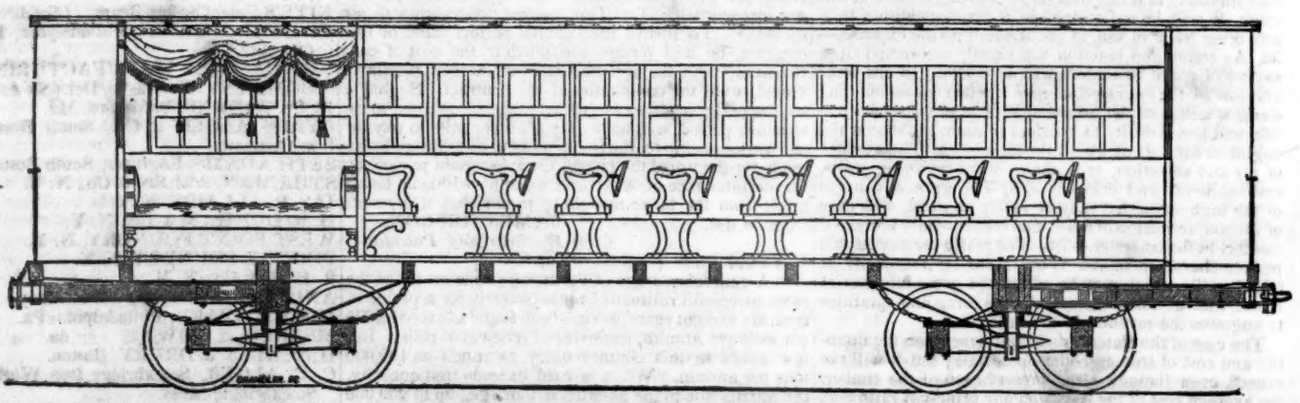
N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms. *Philadelphia, Pa., April 6, 1844.*

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

BENTLEY'S PATENT TUBULAR STEAM BOILER. The above named Boiler is similar in principle to the Locomotive boilers in use on our Railroads. This particular method was invented by Charles W. Bentley, of Baltimore, Md., who has obtained a patent for the same from the Patent Office of the United States, under date of September 1st, 1843—and they are now already in successful operation in several of our larger Hotels and Public Institutions, Colleges, Alms Houses, Hospitals and Prisons, for cooking, washing, etc.; for Bath houses, Hatters, Silk, Cotton and Woollen Dyers, Morocco dressers, Soap boilers, Tallow chandlers, Pork butchers, Glue makers, Sugar refiners, Farmers, Distillers, Cotton and Woollen mills, Warming Buildings, and for Propelling Power, etc., etc.; and thus far have given the most entire satisfaction, may be had of D. K. MINOR, 23 Chambers st. New York.

The article is complete in itself, occupies but little space, is perfectly portable, and requires no brick work, not even to stand upon. It is valuable not only in the saving of time and labor, but in the economy of fuel, as it has been ascertained by accurate measurement, that the saving in that article is fully two-thirds over other methods heretofore in use. They are now for the first time introduced into New York and Boston by the subscriber, who has the exclusive right for the New England states, New York and New Jersey, and are manufactured by CURTIS & RANDALL, Boston; and by FORCE, GREEN & CO. New York.

DAVENPORT & BRIDGES' CAR WORKS.



DAVENPORT & BRIDGES CONTINUE TO MANUFACTURE TO ORDER, AT THEIR WORKS, IN CAMBRIDGEPORT, MASS Passenger and Freight Cars of every description, and of the most improved pattern. They lso furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices. All order punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—coaches pass every fifteen minues.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by
A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.
ANDREW C. GRAY,
ja45 President of the Newcastle Manuf. Co.

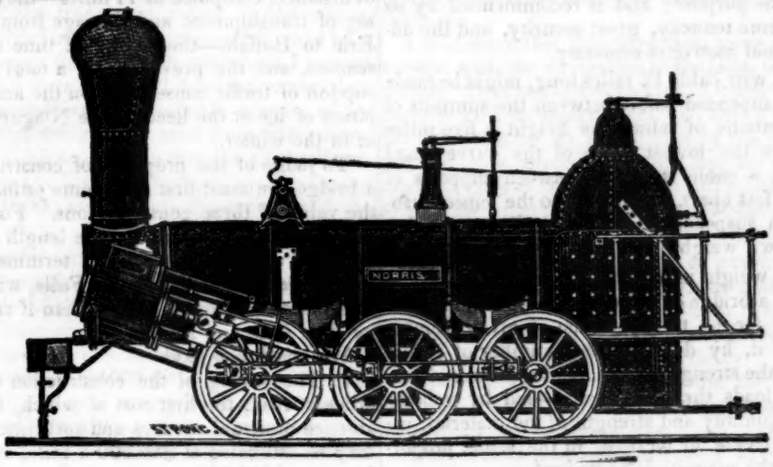
CUSHMAN'S COMPOUND IRON RAILS. etc. The Subscriber having made important improvements in the construction of rails, mode of guarding against accidents from insecure joints, etc. —respectfully offers to dispose of Company, State Rights, etc., under the privileges of *letters patent* to Railroad Companies, Iron Founders, and others interested in the works to which the same relate. Companies reconstructing their tracks now have an opportunity of *improving* their roads on terms very advantageous to the varied interests connected with their construction and operation; roads having to use flat bar rails are particularly interested, as such are permanently available by the plan.

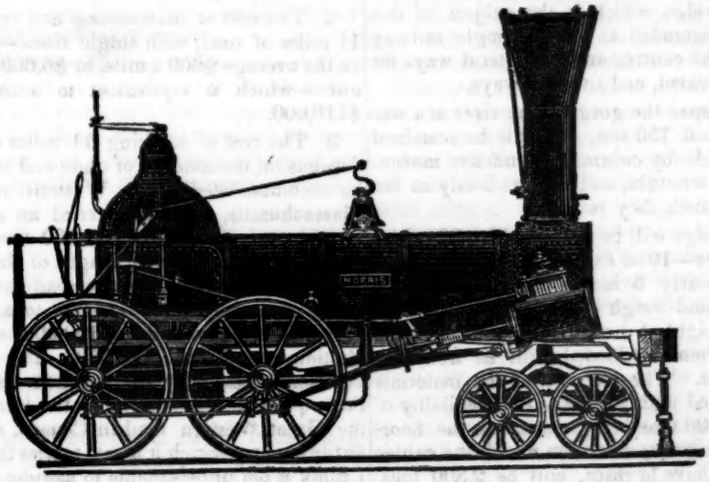
W. Mc. C. CUSHMAN, *Civil Engineer*,
Albany, N. Y.

Mr. C. also announces that Railroads, and other works pertaining to the profession, may be constructed under his advice or personal supervision. Applicaitons must be post paid.

NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.





MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15	inches	Diameter of	Cylinder,	× 20	inches	Stroke.
"	2,	14	"	"	"	× 24	"	"
"	3,	14½	"	"	"	× 20	"	"
"	4,	12½	"	"	"	× 20	"	"
"	5,	11½	"	"	"	× 20	"	"
"	6,	10½	"	"	"	× 18	"	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion Castings of all kinds made to order: and they call attention to their Chilled Wheels for the Trucks of Locomotives, Tenders and Cars.

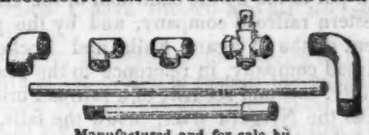
NORRIS, BROTHERS.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Corks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER Flues.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

RAILROAD IRON.—THE MARYLAND AND NEW YORK IRON AND Coal Company are now prepared to make contracts for Rails of all kinds. Address the Subscriber, at Jennon's Run, Alleghany County, Maryland.
WILLIAM YOUNG,
jy451m President.

TO IRON MASTERS.—FOR SALE.—MILL SITES in the immediate neighborhood of *Bituminous Coal* and *Iron Ore*, of the first quality, at Ralston, Lyoming Co., Pa. This is the nearest point to tide water where such coal and ore are found together, and the communication is complete with Philadelphia and Baltimore by canals and railways. The interest on the cost of water power and lot is all that will be required for many years the coal will not cost more than $1 to $1 25 at the mill sites, without any trouble on the part of the manufacturer; rich iron ore may be laid down still more cheaply at the works; and, taken together these sites offer remarkable advantages to practical manufacturers with small capital. For pamphlets, descriptive of the property, and further information, apply to Archibald McIntyre, Albany, to Archibald Robertson, Philadelphia, or to the undersigned, at No. 23 Chambers street, New York, where may be seen specimens of the coal and ore.
W. R. CASEY, *Civil Engineer*,

VALUABLE PROPERTY ON THE MILL Dam For Sale: A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 feet, with lathes, work benches, &c.

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side of Parker st., containing 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia. ja45

CYRUS ALGER & CO., South Boston Iron Company.

Niagara Suspension Bridge.

PHILADELPHIA, Nov. 27, 1845.

To George S. Tiffany, Esq., Chairman of the Great Western Railroad Company, and Washington Hunt, Esq., President of the Niagara Falls and Lockport Railroad Company:

GENTLEMEN: The questions which have been put to me by the chairman of the Great Western railroad company, and by the president of the Niagara Falls and Lockport railroad company, in reference to the practicability, cost and security of a railroad bridge across the Niagara river, below the falls, to unite their works and remove the only interruption to a great line of intercourse, coinciding in all essential particulars, I have thought it well to reply to both parties in the same paper, so that one communication may cover all the important ground.

For this purpose I will repeat the questions of Mr. Tiffany, and in compliance with the concluding sentence of his letter, add such other information in my reply, as may seem to be explanatory of the subject.

The following are the questions as submitted:

1. "Have you examined the Niagara river below the falls, with a view to the construction of a suspension bridge?

2. "If so, do you think it practicable?

3. "How far would the proposed site be from the falls?

4. "Of what material would you advise the bridge to be built?

5. "What would it cost, and what time would it take to build it?

6. "Can it be so constructed as to be perfectly safe for locomotives trailing 200 tons to pass over it with velocity, without putting the bridge to the extent of its power?"

In reply to these questions, I have to say that I have examined several sites for a bridge across Niagara river, commencing with a point above the falls, on Goat Island, and passing thence to other places below the falls, and in the neighborhood of Lewiston.

So far as regards the simple question of *practicability*, either of these localities might be selected, and a bridge competent to all the duties of railroad traffic, constructed with perfect security and success. But the position which appears to be most suitable, on account of the near approach of opposite cliffs and of the favorable form of the ground for the fastening of the cables, and the entrance of the railroads on either side, is about one and a half miles below the falls; and I believe the lowest point on the east bank of the river from which the cataract is visible.

This point is a short distance above the whirlpool. The river is here 700 feet wide, measuring from rock to rock; but as the upper ledge of the lime stone rather overhangs the base, it is necessary to fall back, for the sake of security, and make the span of the bridge about 750 feet.

The surface of the rock on the New York shore, is 210 feet above the Niagara. The material is of firm structure, and offers an unexceptionable foundation. The space to be spanned is entirely within safe limits.

The question of practicability admits of no discussion. The only points which it seems necessary to consider, are the probable cost of the work, and the value of the motives for its construction. Bridges of greater span have been erected and tested by ten years' use; and if the present objects require a work capable of sustaining heavier weights, or which must be subjected to rougher usage than those which have been made, it must be rendered proportionally stronger and securer. But while such considerations influence the *cost*, they cannot raise up a question of practicability.

The material which I would propose to employ is iron wire formed into cables of adequate strength, in the mode usually adopted for suspension bridges.

This is, in fact, the only material suitable for the purpose; and is recommended by its extreme tenacity, great security, and the additional motive of economy.

A wire cable 12 miles long, might be made and supended safely between the summits of mountains, of which the height is five miles above the lowest point of the curve; and such a cable stretched between supports of 750 feet apart, and drawn to the tension usual in suspension brid ges, will sustain first its own weight, and then some 25 times its own weight in addition.

If a bridge of a given span be secure when used for the transportation of given weights over it, by doubling the number of cables and the strength of the flooring, it would sustain loads thrice as heavy—and by trebling the quantity and strength of the material, we may treble or increase in the same proportion the magnitude of its load.

The bridge which is the subject of this paper, is intended to have a single railway track in the centre, and two lateral ways for common travel, and two foot ways.

It will span the gorge of the river at a single sweep of 750 feet, and will be sustained on each side by columns of massive masonry, finely wrought, and built as firmly as the rock on which they rest.

The bridge will be supported by 20 cables of iron wire—10 on each side—each of which will be nearly 5 inches in diameter, 1000 feet long, and weigh about 19 tons.

The weight of the pendant portion of the Bridge when not loaded, will be from 600 to 700 tons. The strength of the materials is calculated with a view to the possibility of loads of 400 tons being placed on the flooring. The greatest tension which the cables will ever have to resist, will be 2,300 tons. The absolute strength of the largest cables will be 500 tons, and the aggregate strength of the 20 main cables will be 9,000 tons.

These supporting cables will be attached at their extremities to the solid rock by a process similar to that which I have adopted with satisfaction for the eastern fastening of the cables of the Fairmount bridge. They will be sustained at the summits of the columns on moveable saddles, by means of which compensation may be obtained for the expansion and contraction of the material without producing any injurious action on the masonry.

I estimate the cost of this work—assuming that it is to be built for railway purposes, and in the substantial style proposed—at $220,000.

The time required to complete it will depend much on the season of the year when it is commenced. If the preliminary arrangements can be effected this winter, so that the work may be begun in early spring, it may be completed in the course of the year.

The next point for consideration is, will the objects to be subserved by the bridge justify the necessary outlay?

The objects are the obtaining of the most direct route for the great line of railroad reaching from lake Michigan to Boston—the saving of distance, computed at 11 miles—the avoiding of transhipment and ferriage from Fort Erie to Buffalo—the saving of time at all seasons, and the prevention of a total interruption of traffic consequent on the accumulation of ice at the head of the Niagara river in the winter.

To judge of the propriety of constructing a bridge, we must first form some estimate of the value of these considerations. For this purpose, I will assume that the length of the Great Western railroad, if it terminate on the Niagara river below the Falls, will be, as estimated, 11 miles shorter than if carried by Fort Erie and Buffalo.

We shall then have

1. The saving of the construction of 11 miles of road, the first cost of which, in the absence of actual surveys and authentic facts, may be estimated at $20,000 a mile, and for 11 miles $220,000.

2. The cost of maintaining and repairing 11 miles of road, with single track—worth, on the average $600 a mile, or $6,600 per annum—which is equivalent to a capital of $110,000.

3. The cost of working 11 miles of road depends on the amount of trade and travel to be accommodated. The Western road in Massachusetts, in 1844, carried an amount of tonnage equivalent to 71,000 tons transported over the whole length of the line. The Boston and Worcester road the same year, conveyed in all 126,000 tons. The Boston and Lowell Road 150,000, and the Baltimore and Ohio 103.000. The Southern Roads generally carry much less than these quantities; but viewing the location of the Great Western road in Canada, and the fertile country which it is said to pass through, I think it not unreasonable to assume that its trade will be at least 50,000 tons per annum.

The cost of transporting freight on the best managed roads of this country—as well as on those of Great Britain and Europe—is about 2cts. per ton per mile over and above the repairs and maintenance of the road.

50,000 tons carried 11 miles at 2 cents, is $11,000 per annum, which is equivalent to a capital of $183,333.

4. The cost of convaying passengers will depend also on the number to be conveyed. But I think we may safely assume that there

will be two daily trains each way, at a cost per mile run of 50 cents, over and above the road repairs.

Four daily trains running 11 miles at 50 cents each per mile, will give $32 per diem, and for 300 days, $6,600, which is equivalent to a capital of $110,000.

5. The cost of running a ferry boat on a ferry 2 1-2 miles in length, with the necessary shore-fixtures, cannot be set down at less than $30 a day, or $9,000 per annum —which is a capital of $150,000.

6. The expense of transhipping goods, in addition to the maintenance of a ferry boat, will be equal to 20 cents a ton on all goods conveyed. On 50,000 tons it will be $10,000 per annum, which is equivalent to a further capital of $166,666.

7. The loss arising from the total interruption of the trade and travel in the winter, when this ferry will be impassable, will be a very heavy item, though one which I am not prepared to estimate. I have no correct data for determining the probable amount of interruption which will arise from this cause; but it is fair to assume that the Great Western Road will earn 6 per cent. on a capital of $5,000,000, clear of all the expenses of the line.

Leaving out of view entirely the loss which will be increased by the roads on the east side of the Niagara, any interruption to the Canadian improvement alone will be equal to a sacrifice of $300,000 per annum, or to a loss of $1000 for each working day. Each day of total interruption, at a season of the year when there is no competition, will involve a loss of $1000: and as the abstraction of this day's earnings is a thing of annual occurrence, it may be represented by an equivalent capital of $16,666.

If it should appear on a close inquiry that a dependence on a ferry at the head of the Niagara will result in a total stoppage of the trade of the Great Western road for 30 days in the year, then it would seem to be good policy to expend, for the purpose of removing the evil:

For each day, $16,666: for 30 days, $500,000.

These are the leading items—and the only ones I believe which we are able to estimate with any reasonable degree of approximation —of the objections to the adoption of a ferry and the construction of the longer line of road.

It is not pretended that any of these quantities can lay much claim to accuracy; yet I am inclined to believe that if you will examine the several items, separately and closely, they are more likely to appear under, than over valued.

Taking them, however, as they result, we have,

1. The cost of 11 miles of road,	$220,000
2. Repairs and maintenance of 11 miles of road,	110,000
3. Cost of carrying 50,000 tons over 11 miles of road annually, equivalent to a capital of	183,333
4. Carrying passengers 11 miles,	110,000
5. Maintaining and running a ferry boat,	150,000
6. Transhipment of tonnage and depot expenses,	166,666
Equivalent* total capital,	$940,000

If the data which I have assumed be correct—if there be, as estimated, a difference of 11 miles in distance in favor of the route by the falls, which obviates the necessity of a ferry and of all delay and of transhipment—that route will be worth to the Great Western company some $940,000 more than the other without including at all the loss consequent on the total suspension of traffic which may be occasioned by the ice which accumulates at the outlet of lake Erie.

If this intermission amount to 10 days in a year, it is equivalent to an additional capital of $166,000; and if it amount to 30 days it would justify an outlay of $500,000 to remove it.

I will leave this item for others more conversant with the navigation of the lake, to estimate. It is enough at present to know that there is such an interruption, and that it will not only amount to many days in the year, but that even when it does not amount to a total stoppage of the traffic, it is still sufficient to produce great delay and serious embarrassment.

This obstruction is in fact so great, that even for the convenience of parties seeking to reach Buffalo it would be better to cross on a bridge at the falls, and avoid the ferry, than submit to its exposure and delay.

The profits of the railroad from the falls to Buffalo will therefore be greatly promoted by construction of the bridge.

The cost of a bridge such as I have described, and which will remove these impediments to trade and travel, both on the Canadian and American lines of improvement, will be, as stated, $220,000.

The structure itself will be a beautiful and durable object, and the investment a great deal better and more profitable than that of any railroad line now in use on this continent.

I will make no specific estimate of the probable value of the stock. To yourselves, as the head of the two lines of railway most immediately interested in the consummation of the work, these are considerations more important than the dividends that may be anticipated.

I have endeavored to submit these considerations for your reflection, in the belief that you will have confidence enough in the enterprize to carry it through, and gain to your respective companies and the public the benefits of the advantages which it holds out.

For further explanations and calculations respecting the construction and equilibrium of such bridges, I must refer you to the printed documents accompanying this paper, in which I have entered into all necessary detail.

Finally, in reply to the inquiry as to the ability of the bridge to sustain the weight of a locomotive engine drawing a train of 200 tons, at high velocity, I have to say that I am prepared to construct the work for the sum at which I estimate its cost—to complete it within the year 1846—and to test its strength by running a locomotive engine drawing 200 tons as often over it as may be desired and at the highest speed that the engine can attain.

Submitting these remarks for your consideration, I am, gentlemen,

Respectfully your ob't serv't,

CHARLES ELLET, JR., *Civil Eng.*

P. S.—Since closing this communication, I have received a letter from a gentleman who takes much interest in the enterprize, desiring to know for how much less the bridge might be built if it were made with a view to pass railroad cars drawn over by horses, or carried over by the velocity which the engine had previously communicated to the train, without subjecting it to the concentrated weight of the locomotive.

This modification of the plan might be adopted, if it were thought advisable, with a saving in the first cost of about $30,000—reducing the whole expense to $190,000.

This change would not interfere with the further additions by which the bridge would be fitted for the use of locomotives, if it should ever be found desirable to bring the engine o f the provincial road upon this side.

CHARLES ELLET, JR.

* The engineer has here been misinformed as to the difference in the distance from Hamilton to the falls, and to Fort Erie, opposite Buffalo. From Hamilton to the falls, by way of the railroad, will be 40 miles, and from the same place to Fort Erie, 56 miles; difference, 16 miles. Adopting then the engineer's rates for 16, instead of 11 miles, it would be as follows:

1. Cost of 16 miles road	$320,000
2. Repairs and maintenance of 16 miles road, equivalent to a capital of	160,000
3. Cost to carry 50,000 tons freight over 16 miles road, equivalent to a capital of	266,663
4. Carrying passengers 16 miles, equivalent to a capital of	160,000
5. Maintaining and running ferry boat	150,000
6. Transhipment of tonnage and depot expenses do. do	166,666
Equivalent total capital	$1,223,329

Schuylkill Navigation Company.

The Schuylkill Navigation company, says the United States Gazette of the 6th instant, held its annual meeting yesterday morning. Professor Wood presided, and E. K. Price, Esq., acted as secretary.

S. W. Roberts, Esq., the president of the company, read the annual report of the board of directors to the stockholders, and the report of the engineer in chief, Mr Miller, to the board of directors.

A resolution was offered by E. Cresson, Esq., approving the report, and expressing confidence in the favorable results of the present plans of the directors, drew from C. Ellet, Esq., remarks of considerable length and great interest, on the importance of canal navigation for heavy articles.

Mr. E. was earnest and eloquent, and his speech was received with evidences of high approval.

The secretary read the following letters:

(COPY.)

To the Stockholders of the Schuylkill Navigation Company.

A letter from Solomon W. Roberts, expressing his desire not to be considered as a

candidate for president of this company at the ensuing election, is herewith submitted.

The board considers it due to Mr. Roberts to say that he has given the most untiring devotion to the duties of his responsible station at the head of this company for the last three years; that he has complied in the most satisfactory manner, with the resolution of the stockholders, requiring the president to report his acts to the board; and for his able and faithful attention to our business, and uniform desire to promote the true interests of the company, is entitled to our cordial thanks, and best wishes for his future prosperity.

By order of the board of managers.

CLAUDIUS HARPER, Sec'y.

January 5, 1846.

(COPY.)

PHILADELPHIA, Dec. 30th, 1845.

To the Board of Managers of the Schuylkill Navigation Company.

Gentlemen: Having some time since informed you of my intention of declining to be a candidate for re-election to the presidency of the company at the approaching annual meeting of the stockholders, I wish on this occasion to express to the board, and to each of its members, my strong sense of gratitude for the kindness and confidence with which they have constantly treated me.

During the three years since my first election, I have been acting under instructions from the stockholders to report all my official acts to the board; which has been done from time to time with great minuteness.

When, on account of my experience as a civil engineer, I was invited to undertake the presidency, it was anticipated that my principal duties would be those of the superintendence of the use and improvement of the navigation. It has happened, however, that other duties, devolving on the head of the company, and engrossing nearly the whole of my time, have confined me to the office, and are now injuring my health. After I had, at the request of the board, prepared the general plan for the improvement of the works, it was found necessary to commit its execution to other engineers.

The minute investigation of those gentlemen, of high professional standing, and in whom I have great confidence, have corroborated my previous conclusions; and I am satisfied that the plan of the work is correct; that every consideration of sound policy demands its completion with the least possible delay, and that it will richly remunerate the company.

All who are interested in the Schuylkill navigation, should look to this object as the certain means of giving a new and permanent value to their investment; and when it is accomplished, the company will possess a work without a parallel in the country, on which the millions of tons hereafter to constitute the annual trade of the valley of the Schuylkill, will be carried more cheaply than in any other way, and which will bring an amount of tolls to the company's treasury, rich in proportion to the magnitude of the trade and to the great reduction in the cost of its conveyance.

I remain very respectfully and truly yours,

S. W. ROBERTS.

The following resolution was unanimously adopted:—

"*Resolved*, That the thanks of this meeting be tendered to Solomon W. Roberts, late president of this company, for the faithful performance of his duties while presiding over the interests of this institution."

After the transaction of ordinary business, the chairman appointed tellers and judges of the election, and the stockholders proceeded to the choice of officers for the ensuing year, when the following gentlemen were declared duly elected:—

President, Charles Ellet, jr.; Managers—John Sergeant; Jacob G. Morris; William H. Dillingham; Samuel W. Lippincott; John W. Claghorn; Thomas Robins; William Ashbridge; John C. Cresson; William E. Hacker; Thomas Williamson; John R. Worrell; Charles S. Wood; Secretary and Treasurer, Claudius Harper.

From the foregoing proceedings it will be seen that Mr. Charles Ellet, jr., has been elected president of the Schuylkill Navigation company. Mr. Ellet is a gentleman of a high order of talents, has had ample experience in his profession, and is indefatigable in whatever he undertakes; we may therefore say, without any disparagement to his predecessor, that the company could not have selected a man who would be more likely to accomplish the object in view; and we are free to say that we shall be gratified by the ample success of the company—and in the restoration of their stock to its former value;—and while we are upon the subject, we will say to the managers of this company—what we have often before said to the rival companies—come to an *amicable* arrangement—charge a *fair* and *remunerating* price for transpartation; the coal-consuming community will *cheerfully* pay it; it is for *their* interest, as for yours, that *both* companies prosper. *Let the warfare cease.*

New Superintendent of the Norwich and Worcester Railroad.—Many of our readers says the Norwich Courier, will learn with sincere regret that Mr. Emerson Foote who, as superintendent of the Norwich and Worcester railroad, has enjoyed a well earned and substantial popularity, has resigned the responsible office he has held for some 2 or 3 years past. Mr. Foote resigns his office for the purpose, as we understand, of visiting England and there making investigations and obtaining information on the subject of railroads with reference to certain railway projects now on foot in this country. Whether he leaves before spring we are not informed. We cordially wish him success, whenever and wherever he goes.

The gentleman who has been selected by the railroad company as Mr. Foot's successor is Mr. J. W. STOWELL—a gentleman every way qualified for the office—and we do not doubt that the experience of the future will abundantly vindicate the wisdom and sagacity of the directors in the choice they have made.—*Norwich Courier.*

We are gratified at, instead of regretting, the resignation of Mr. Foot. We wish *more such* gentlemen would resign, and for the *same* reason too, viz. to visit Europe, and investigate the systems of *railway management there*, that they may compare them with ours in this country, and thus be able to introduce the best possible system of management here. We *need* reform on many of our roads; and we shall have it, too, whenever intelligent, practical men, adopt this course, of going personally to investigate what is done elsewhere.

The Railroad.—The board of directors, says the Portland Advertiser of 6th inst., are adopting all practicable mesures to perfect the surveys, and to have the data for location as fully and accurately collected, as may be, at the opening of the next season. One party of engineers came in a short time from their fall tour. Another party still remains out, and we learn that a new company is to leave the city to-day, to resume and continue the survey, west of the highlands in New Hampshire, and in the neighborhood of Canaan, in the north of Vermont.

Judge Preble has probably now been in England a fortnight. He will have had time to make some arrangements, before the arrival out of the Cambria, and though we regret the news, which that steamer carried out, yet we confidently hope, that there will be sufficient firmness and intelligence to sustain American interests in England, until the receipt of the more auspicious intelligence, just taken out by the Acadia.

If, in fact, a good understanding had already been established, between Mr. McLane and lord Aberdeen, as many rumors have asserted, it may be, that the English community have had less excitement, than has existed on this side.

Judge Preble and Mr. McLane now meet in London, as they met in 1830. Both were then ministers Plenipotentiary; both are now presidents of railroad companies—facts, which indicate the social and political importance of this great improvement.

Boston, Concord and Montreal Railroad.—The Manchester company, (composed of Walter French, Buntin, and some eight other persons,) have contracted to do the grading and masonry for the Boston, Concord and Montreal railroad, from this town to Rumney—about half the route. We learn that the company subscribe for a large amount of stock. The directors have ordered an assessment upon the capital stock. The work is to be begun soon.—*New Hampshire Patriot, January 1.*

AMERICAN STATE WORKS AND CANALS, ETC.

		STATE WORKS.	Length in miles.	Cost.	1843. Income.	1843. Expend.	1844. Income.	1844. Expen.
N. Y.	1	Black river canal	35	1,524,967	.....	.....	.....	.....
"	2	Cayuga and Seneca	21	237,000	16,557	10,953	24,618	14,443
"	3	Champlain canal	64	1,251,664	102,308	.....	116,739	.....
"	4	Chemung	23	684,600	8,140	14,486	14,385	12,740
"	5	Chenango	97	2,420,000	16,195	15,967	22,179	15,960
"	6	Crooked lake	8	156,777	461	3,674	1,498	3,951
"	7	Erie—enlargement of	363	12,648,852	1,880,316	.....	.....	.....
"	8	Genessee valley	120	3,739,000	.....	.....	.....	.....
"	9	52 miles opened, cost $1,500,000	.....	.....	12,292	13,819	19,641	15,557
"	10	Oneida lake	6	50,000	225	2,239	621	1,636
"	11	Oswego	38	565,437	29,147	22,742	56,165	28,599
Pa.	12	Beaver division canal	25	.....	.....	.....	7,381	5,386
"	13	Delaware canal	60	.....	.....	.....	109,278	22,870
"	14	French creek	45	.....	.....	.....	.....	.....
"	15	Seneca river towing path	.....	69,276	.....	.....	381	.....
"	16	Columbia railroad	82¼	4,204,969	.....	.....	443,336	205,067
"	17	Eastern division	36	.....	.....	.....	179,781	138,915
"	18	Juniata canal	93					
"	19	Portage railroad	36½	1,828,461	.....	.....	351,102	248,943
"	20	Western division canal	105					
"	21	North branch Susquehannah canal	73					
"	22	West " " "	72	.....	.....	.....	101,949	57,633
Ohio	23	Hocking canal	56	975,130	4,757	.....	5,286	4,139
"	24	Miami canal	85	1,660,742	68,640	38,826	77,844	22,341
"	25	Miami extension	105	2,856,636	8,291	.....	12,723	14,741
"	26	Miami northern division	35	322,000	.....	.....	unfin'd.	.....
"	27	Muskingum	91	1,627,318	23,167	.....	29,385	15,027
"	28	Ohio	334	4,600,000	322,754	123,398	343,711	113,210
"	29	Wabash	91	3,028,340	35,922	6,400	48,589	12,817
"	30	Walhonding	25	607,269	838	39,005	1,977	1,238
"	31	Western road	31	255,015	7,254	1,782	8,747	2,929
Ind.	32	Sundry works	.....	11,000,000	.....	.....	.....	.....
"	33	Maume canal	.....	.....	.....	.....	.....	.....
Ill.	34	Sundry works	.....	10,000,000	.....	.....	.....	.....
Mich	35	Central railroad	110	1,842,308	149,987	75,960	211,170	89,420
"	36	Southern railroad	68	936,295	24,064	7,907	60,341	70,000

The State Canals are all 4 feet deep, and the locks are 13 to 17 feet wide, and 80 to 90 feet in length.

The six millions paid to the canal fund from auction and salt duties are not included in the estimate of cost. The Genesee valley and the Black river canals require large sums for their completion, the interest of which *additional* sum is much greater than the estimated gross income of these canals when finished. The sums required to complete these two canals are $2,000,000 and $600,000, making their total cost when finished $5,553,000 and $2,409,000; an expenditure incurred on estimated incomes (admitted to be liberal,) of $39,000 and $14,000 respectively.

The total receipts from the works of Pennsylvania for 1843 were $1,019,401; for 1844 $1,164,326, and the cost about 30 millions.

The receipts for 1844 were as follows:

Canal tolls,	578,404
Railroad tolls,	252,855
Motive power,	319,590
Trucks,	13,477

of which $585,922 is from 118 miles of railroad, and $578,404 from 550 miles of canal.

The canals of Ohio are supported by a property tax of 5½ mills on the dollar. There are 853 miles of canal in the State, which yielded in 1843 $471,623, and in 1844 $515,393, the cost, 1st Jan. '43 being $15,577,233. The increase of '44 over '43 is only $43,770, though the year '44 has exhibited a greater increase throughout the country than ever before known.

These 21 millions on sundry works yield no nicome whatever.

The central railroad yields above 6 per cent., and is the only State work—the Erie canal excepted—which is able to stand alone.

CANALS.	Length in miles.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.
Blackstone	.....	.....	.....	.....	....	.....	.....	....	.....
Bald Eagle Navigation	25	400,000	.....	.....	....	.....	.....	....	.....
Beaver and Sandy, (part)	.....	1,000,000	.....	.....	....	.....	.....	....	.....
Charleston, (S. C.)	.....	.....	.....	.....	....	.....	.....	....	.....
Chesapeake and Ohio	184	12,370,470	47,637	.....	....	.....	.....	....	.....
Conestota	12	300,000	.....	.....	....	.....	.....	....	.....
Delaware and Chesapeake	13	.....	.....	.....	....	.....	.....	....	26
Schuylkill	108	3,500,000	279,795	102,221	....	190,693	120,624	....	31
Farmington	.....	.....	.....	.....	....	.....	.....	....	.....
James river and Kenhawa	.....	.....	.....	.....	....	.....	.....	....	.....
Middlesex	.....	.....	.....	.....	....	.....	.....	....	.....
Port Deposit	10	200,000	.....	.....	....	.....	.....	....	.....
Delaware and Raritan	43	2,900,000	99,623	53,327	....	131,491	84,455	....	.....
Southwark	.....	300,000	.....	.....	....	.....	.....	....	.....
Tide Water	45	2,900,000	.....	.....	....	.....	.....	....	.....
Union	80	2,000,000	.....	.....	....	.....	.....	....	.....
Morris	101	1,000,000	.....	.....	....	.....	.....	....	26½
Dismal Swamp	.....	.....	.....	.....	....	.....	.....	....	.....

We may, perhaps, at some future time be enabled to give the particulars of all these canals.

The Chesapeake and Ohio canal is not yet completed to the coal mines, hence its trifling income.

The enlargement of the Schuylkill canal has been commenced.

The Morris canal was lately sold for one million, about one-fourth of its cost.

CANADIAN CANALS.	Length in miles.	No. of locks.	Lockage in feet.	Size of locks. Length of chamber.	Width.	Depth on mitre sill.	Width of canal. Bottom.	Surface.	Estimate.	Expended to Sept. 1843.	Income. 1843.	1844.
The Welland canal	.....	.....	.....	feet.	feet.	feet.	feet.	feet.	3,948,572	2,485,572	64,658	
Main trunk from Port Colborne to Port Dalhousie	28	31	328	150	26 1-2	8 1-2	45	81	.....	.....		
Junction branch to Dunville (not added)	21	1	6	150	26 1-2	8 1-2	35	71	.....	.....		
Broad creek branch to Port Maitland (below.)	1 1-2	1	6	200	45	9	45	85	.....	.....		
The St. Lawrence canal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Galcps and Port Cardinal	2	2	7	200	45	9	50	90	.....	.....		
Rapid Plat	4	2	11 1-2	200	45	9	50	90	672,498	973		
Farren's point	3-4	1	3 1-2	200	45	9	50	90	.....	.....		
Cornwall, passing the Long Sault rapids	11 1-2	7	48	200	55	9	100	150	865,372	1,665,663		
Beauharnois, do. Coteau, Cedars and Cascades road	11 1-4	9	82 1-2	200	45	9	80	120	1,190,087	275,426		
Lachine, do. Lachine rapids	8 1-2	5	44 1-2	200	45	9	80	120	old canal	400,000	29,288	
Elargement of do.	.....	.....	.....	.....	.....	.....	.....	.....	1,001,333	64,439		
Total from lake Erie to the sea	12	57	325									
Chambly	66	9	74	120	24	6	36	60	200,000	440,000	1,409	

COAL COMPANIES.	Length in miles R. rd.	Length in miles Canals.	Cost.	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	Value of stock.	REMARKS.
Delaware and Hudson	16	108	2,800,000	930,203	196,702	10	.....	.....	....	130	
Lehigh	20	72	6,000,000	.....	.....	....	.....	.....	....	31	

AMERICAN RAILROADS.

		NAMES OF RAILROADS.	Length in miles.	Cost.	Loans and debts.	Number of shares.	Paid on share	1843. Income. Gross.	1843. Income. Nett.	Div. per cent.	1844. Income. Gross.	1844. Income. Nett.	Div. per cent.	1845. Income. Gross.	1845. Income. Nett.	Div. per cent.
Maine.	1	Portland, Saco and Portsmouth	50	1,200,000	.....	.....	....	89,997	47,166	7	131,404	62,172	6	.....	.....	....
N. Ham.	2	Concord	35	750,000	.....	.....	....	.....	.....	....	.....	.....	12	.....	.....	....
Mass.	3	Boston and Maine	56	1,485,461	.....	.....	....	178,745	68,499	6	233,101	86,401	6½	.....	.....	....
....	4	Boston and Maine extension	17½	455,703	unfin.	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	5	Boston and Lowell	26	1,863,746	.....	.....	....	277,315	144,000	8	316,909	147,615	8	.....	.....	....
....	6	Boston and Providence	41	1,886,135	none.	18,600	100	233,388	110,823	6	282,701	156,109	6	.....	.....	....
....	7	Boston and Worcester	44	2,914,078	.....	.....	....	404,141	162,000	6	428,437	195,163	7½	.....	.....	....
....	8	Berkshire	21	250,000	not stated	.....	....	.....	17,500	7	17,737	.....	....	.....	.....	....
....	9	Charlestown branch	.....	280,260	.....	.....	....	.....	.....	13	34,654	13,971	5½	.....	.....	....
....	10	Eastern	54	2,388,631	.....	.....	....	279,563	140,595	6	337,238	227,920	8	.....	.....	....
....	11	Fitchburg	50	1,150,000	just opn'd	.....	....	.....	.....	....	42,759	26,835	....	.....	.....	....
....	12	Nashua and Lowell	14½	380,000	.....	.....	....	84,079	.....	8	94,588	34,944	10	.....	.....	....
....	13	New Bedford and Taunton	20	430,962	.....	.....	....	50,671	24,000	6	64,998	24,000	6	.....	.....	....
....	14	Northampton and Springfield	.....	172,883	unfin.	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	15	Norwich and Worcester	66	2,290,000	900,000	16,535	100	162,336	24,871	....	230,674	99,464	3	.....	.....	....
....	16	Old Colony	.....	87,820	unfin.	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	17	Stoughton branch	4	63,075	unfin.	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	18	Taunton branch	11	250,000	.....	.....	....	.....	20,000	8	96,687	20,000	8	.....	.....	....
....	19	Vermont and Massachusetts	.....	.....	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	20	West Stockbridge	3	41,516	200	.....	100	.....	.....	....	.....	.....	4	.....	.....	....
....	21	Western, (117 miles in Mass.,)	156	7,686,202	4,686,202	30,000	....	573,882	284,432	....	753,753	439,679	3	.....	.....	....
....	22	Worcester branch to Milbury	3½	42,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	23	Housatonic, (10 months,)	74	1,244,123	.....	.....	....	.....	.....	....	150,000	.....	....	.....	.....	....
Conn.	24	Hartford and New Haven	38	1,100,000	100,000	10,000	100	.....	.....	....	.....	.....	6	.....	.....	....
....	25	Hartford and Springfield	25½	600,000	400,000	2,000	100	.....	.....	....	.....	.....	....	.....	.....	....
....	26	Stonington, (year ending 1st Sept.,)	48	2,600,000	650,000	13,000	100	113,889	.....	....	154,724	79,845	....	.....	.....	....
N. York.	27	Attica and Buffalo	31	336,211	.....	.....	....	45,896	7,522	....	73,248	48,033	....	.....	.....	....
....	28	Auburn and Rochester	78	1,796,342	200,000	14,000	100	189,693	112,000	....	237,667	152,007	6	.....	.....	....
....	29	Auburn and Syracuse	26	766,657	.....	.....	133½	86,291	27,334	....	96,738	52,544	6	.....	.....	....
....	30	Buffalo and Niagara	22	200,000	.....	1,500	....	.....	.....	....	.....	.....	....	.....	.....	....
....	31	Erie, (446 miles,)	.....	5,000,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	32	Erie, opened	53	.....	.....	.....	....	.....	48,000	....	126,020	59,075	....	.....	.....	....
....	33	Harlem	26	2,250,000	750,000	30,000	....	.....	.....	....	140,685	62,399	....	.....	.....	....
....	34	Hudson and Berkshire	31	575,613	.....	.....	50	.....	.....	....	35,029	1,789	....	.....	.....	....
....	35	Long Island	96	1,610,221	392,340	29,846	....	.....	.....	....	153,456	58,996	....	.....	.....	....
....	36	Mohawk and Hudson	17	1,317,893	400,000	10,000	100	69,948	58,780	....	79,804	45,763	....	.....	.....	....
....	37	Saratoga and Schenectady	22	303,658	.....	.....	....	42,242	3,000	1	34,666	8,455	....	.....	.....	....
....	38	Schenectady and Troy	20½	640,800	.....	.....	....	28,043	.....	....	32,646	6,365	....	.....	.....	....
....	39	Syracuse and Utica	53	1,115,897	none.	16,000	62½	163,701	72,000	....	192,061	120,992	8	.....	.....	....
....	40	Tonnawanda	43	727,332	.....	.....	....	76,227	.....	....	111,177	75,865	5	.....	.....	....
....	41	Troy and Greenbush	6	180,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	42	Troy and Saratoga	25	475,801	.....	.....	....	44,325	21,000	....	38,502	9,971	2½	.....	.....	....
....	43	Utica and Schenectady	78	2,168,165	none.	20,000	100	277,164	180,000	9	331,932	199,094	8	.....	.....	....
N. Jersey	44	Camden and Amboy	61	3,200,000	.....	.....	....	682,832	383,880	....	784,191	404,956	....	.....	.....	....
....	45	Elizabethtown and Somerville	26	500,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	46	New Jersey	34	2,000,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	47	Paterson	16	500,000	.....	.....	....	.....	.....	....	.....	.....	6	.....	.....	....
Penn.	48	Beaver Meadow	26	1,000,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	49	Cumberland Valley	46	1,250,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	50	Harrisburg and Lancaster	36	860,000	645,929	.....	....	.....	.....	....	.....	.....	....	77,538	9,988	....
....	51	Hazleton branch *	10	120,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	52	Little Schuylkill	29	900,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	53	Blossburg and Corning	40	600,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	54	Mauch Chunk *	9	100,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	55	Buck Mountain	4	72,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	56	Minehill and Schuylkill Haven	19½	396,117	25,000	7,019	50	.....	.....	12	.....	.....	12	.....	.....	....
....	57	Norristown	20	800,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	58	Philadelphia and Trenton *	30	400,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	59	Pottsville and Danville	29½	1,500,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	60	Reading	94	9,457,570	7,447,570	40,200	50	.....	.....	....	597,613	343,511	....	.....	.....	....
....	61	Schuylkill valley *	10	1,000,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	62	Williamsport and Elmira	25	400,000	.....	.....	....	20,000	.....	....	.....	.....	....	.....	.....	....
....	63	Philadelphia and Baltimore	93	1,400,000	.....	.....	....	43,043	200,000	....	.....	210,000	....	.....	.....	....
Delaw're	64	Frenchtown	16	600,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
Maryl'd	65	Baltimore and Ohio, (1st Oct.)	188	7,742,410	1,153,709	.....	....	575,235	279,402	....	658,620	346,946	....	738,603	374,762	3
....	66	Baltimore and Washington	38	1,800,000	.....	.....	....	177,227	71,691	....	212,129	104,529	....	208,813	95,094	6
....	67	Baltimore and Susquehanna	58	3,000,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	68	Wrightsville, York and Gettysburg	12½	500,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
Virginia	69	Greensville and Roanoke	18	284,433	37,544	2,000	100	.....	.....	....	25,368	6,074	3	.....	.....	....
....	70	Petersburg	63	969,880	63,000	7,690	100	.....	.....	....	122,871	72,898	6	.....	.....	....
....	71	Portsmouth and Roanoke	78½	1,454,171	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	72	Richmond, Fredericksb'g and Potomac	76	800,000	.....	.....	....	.....	.....	....	185,243	85,688	....	.....	.....	....
....	73	Richmond and Petersburg	22½	700,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	74	Winchester and Potomac *	32	500,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
N. Car.	75	Raleigh and Gaston *	84½	1,360,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	76	Wilmington and Raleigh *	161	1,800,000	.....	.....	....	.....	.....	....	.....	.....	5	.....	.....	....
S. Car.	77	South Carolina	136	3,671,452	.....	34,410	75	201,464	77,456	....	532,871	140,196	....	.....	.....	....
....	78	Columbia	66													
Georgia	79	Central	190½	2,591,723	410 000	20,510	100	227,532	93,190	....	328,425	180,704	....	.....	.....	....
....	80	Georgia	147½	2,650,000	.....	.....	....	248,026	158,207	....	248,096	147,523	....	.....	.....	....
....	81	Montgomery and West Point	89	500,000	170,000	.....	100	.....	.....	....	35,000	15,000	....	.....	.....	....
Kent'ky	82	Lexington and Ohio	40	450,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
Ohio.	83	Little Miami	40	400,000	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....
....	84	Mad river	40	152,000	.....	.....	....	.....	.....	....	.....	.....	....	24,984	3,280	....
Indiana	85	Madison and Indianapolis	56	212,000	50,000	.....	....	22,110	8,639	8	39,031	10,065	9½	.....	.....	....
Canada	86	Champlain and St. Lawrence	15	.....	.....	.....	....	.....	12,000	....	58,000	24,000	....	.....	.....	....
....	..	.....	.....	.....	.....	.....	....	.....	.....	....	.....	.....	....	.....	.....	....

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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AMERICAN RAILROAD JOURNAL.

PUBLISHED BY D. K. MINOR, 23 Chambers street, N.Y.

Saturday, January 17, 1846.

Suspension Bridge over the Niagara River.

This interesting, and exceedingly important project seems to be gaining favor daily. The bold idea —to most people in the country especially—of throwing a bridge across the Niagara near the falls, is sure to be carried out at an early day, and we desire as promoters as well as chroniclers of such enterprizes to contribute our *mite* to its success, and therefore give Mr. Ellet's able and interesting letter to the presidents of the two railroad companies entire, in the Journal; that it may reach the profession generally throughout the country, and in Europe. It is very evident from Mr. Ellet's letter that, as a matter of economy, it would be better to construct a bridge, even if it cost $500,000, than to attempt to cross the river by a ferry; it will not, however, it is shown, cost much, if any, over $200,000—that is $220,000, to pass locomotives, or $190,000, if the cars are taken over by horse power—or by the impetus given by the engine. And it is possible that a spirited competition which will *of course* take place between the able and experienced engineers, *Mr. Ellet* and *Mr. John A. Roebling*—who have earned enduring laurels in the construction of wire suspension structures in this country—will reduce somewhat the cost of the structures.

Mr. Ellet's "Fairmount bridge" over the Schuylkill, which does him great credit—a full account, with a beautiful engraving of which appeared in this Journal, March 1st, 1840—has "one principal opening of 400 feet span, and two lateral stone arches of 65 feet each." The platform or bridge-way, is supported by four wire cables of about 600 feet each in length, and from 4 to 5 inches in diameter; being composed of about 900 strands each of iron wire, covered with a coat of durable varnish before it is put in the cable.

This bridge has now been in use for several years, and has been tested in a variety of ways, and especially by *droves of cattle*—a trial of the most thorough kind—and has been found entirely adequate to the objects in view. Mr. Ellet, therefore, has strong testimony in his favor, in addition to his well-established reputation as a man of science, and experience as an engineer. The Fairmount bridge cost, we believe, about $52,000. Mr. Ellet, however, with *all his advantages*, will find an able competitor, should he enter the field, in Mr. John A. Roebling of Pittsburgh, whose name must be familiar to those who have been readers of the Journal during the last eight years. His papers on "Hydraulics," and on the "theory of the crank," and especially the former, have been highly complimented by men every way competent to judge—whilst his recent triumph, in the construction of a *suspension aqueduct*, for the main line of Pennsylvania canal, across the Alleghany river at Pittsburgh—the *first* structure of the kind ever erected—and his more recent construction of a suspension bridge across the Monongahela, now nearly completed, shows that he has not only the *science*, but also the immediate *practical experience* and *mechanics* now in employ, which would enable him to compete under very favorable circumstances for the honor of making his mark, and of erecting a proud monument to his memory, upon the enduring rocks of Niagara—and if *we* were competitors—as we have *quite a mind to be*—for the contract, we should rather enter the field with almost any other gentlemen than Mr. Ellet and Mr. Roebling.

A full description of the suspension aqueduct, with a cross section engraving, was published in this Journal on the 9th October last. Its length is 1140 feet, divided into seven spans, of 160 feet each, and cost, including *removal* of the old structure, and *repairs* of *old piers*, $62,000. A very small amount, it appears to us, for such a work. The Monongahela bridge, now in course of construction is, we believe, over 1400 feet in length, and was contracted for at the exceedingly low price of $53,000.

There appears to be *another* Richmond in the field. We have been requested to put the following queries. This is possibly from some gentleman who would recommend some *other* plan—at all events, we give him a place, as we hope to see a clear field and fair competition for the contract, even if *we* do not obtain it.

Niagara Bridge.

A subscriber to the Railroad Journal wishes to be informed whether the railroad companies, who design to construct a railroad bridge over the Niagara river, below the falls, will give a general invitation for plans and proposals or not, and whether they have already decided upon the *suspension* principle, and entered into permanent arrangements for its construction?

Rival Railroads.

We find in the "Niagara Democrat," of 31st December, the following intimation of a disposition to start the project of a *rival* railroad from Rochester to Syracuse. We recently saw a similar intimation of intention to apply for a charter for a road from Schenectady to Utica. These intimations are significant indications, either that the managers of the present roads do not meet the just expectations of the public, or that there is a growing disposition in the country in favor of railway investments.

The editor of the Democrat says: "A railroad is proposed direct from Rochester to Syracuse, on the canal route. It would be a saving of 20 miles in the distance, compared with the present railroad." The editor also says: "If we must have railroads, the more the merrier—or, *rather*, the *more* the *less objectionable on the score of monopoly*." We desire to ask the editor if he would, if he could, banish railroads from the country? Would he return again to stage coaches on common roads? or, rather, on *uncommonly bad* roads, to which we were in most cases doomed before railroad cars superceded stages?

We are as averse to "*monopolies*," as the editor of the Democrat, *or* as the *verriest democrat* in the land; but we are *also* averse to the encouragement of ruinous *rivalries* in matters which require such vast expenditure in their construction as railroads and canals.

We hold that individuals who invest their capital in works which promote the *general* interest; that is to say, which increase the value of property, as well of those who do not, as of those who do, contribute to their construction; reduce, in a very large proportion, the expense of travel and transportation, and, what is of still greater importance, add days, and we may almost say *years* to our lives, by enabling us to perform a given amount of labor in a much less period of time, are entitled to liberal returns upon their investment; and we shall always be found sustaining their interest, and opposing an unnecessary rivalry, *if* they manage the works under their charge in a spirit of liberality to those who either from choice or necessity, have occasion to use them. It is but just that those who risk their capital in such investments—whereby those who *use* are more benefitted than those who invest —should be protected in a proper enjoyment of the fruits of their enterprize, *so long* as they afford all *reasonable facilities and accommodation* to those who have granted them privileges, and still sustain them by making those privileges valuable; but, when, *having obtained exclusive privileges*, companies feel their power, and forget the rights of those who gave them ability to exercise that power; and neglect to afford accommodations in accordance with the *spirit* and progress of the age, and at prices which will, at the same time, yield the greatest amount of income, and afford the greatest economy to those who pay, they will find us among the foremost to expose, and reprobate their conduct; and, if need be, aiding in the establishment of competing lines, in order that they may learn by experience that the interests of the shareholders and the public are *identical*, and that a liberal spirit of management is sure to be met by a liberal support.

The present indications of rivalry should lead the companies to inquire whether they have not given just grounds for dissatisfaction, either by their *high rates of fare, or low rates of speed*—or, indeed, by *both*, when compared with other roads, both in this country and in Europe. It is a question well worth *their* consideration and prompt action, if grounds for complaints exist. We do not *now* express an opinion either way, but may feel called upon at an early day to submit a comparative statement of the rates of fare, rates of speed, and *comparative cost* of the railroads of this, and other countries, that our readers may be able to judge for themselves, whether they are not in truth, under all the circumstances, better and cheaper accommodated on *some* of our railroads, and more imposed upon on others, than the people in any other country. We shall then be able to judge *where* rival lines *ought* to be established, and shall not hesitate, when we are so satisfied, to speak out upon the subject.

For the American Railroad Journal.

Schuylkill County Railroads.--No. 8.

Mount Carbon and Port Carbon Railroad.—This road commences at the termination of the Reading road at Mount Carbon, three-fourths of a mile below Pottsville, and has its terminus at Port Carbon, a distance of two and a half miles. This road was commenced in April, 1844, and finished in December of the same year, having a double track laid with heavy iron of the H pattern, and cost $80,000. Owing to the tearing up of the old Schuylkill valley railroad, in the beginning of the season, this road was deprived of about half the business it otherwise would have done; and yet, notwithstanding these disadvantages, the business done the last six months will warrant the declaring a dividend of 8 per cent.—Port Carbon being the termination of the canal. The Port Carbon road has been extended up the Schuylkill valley, a distance of ten miles, under the title of the

Schuylkill Valley Railroad.—This road replaces

the old plate rail road, which would not admit of the Reading railroad cars passing over it, on account of the narrow gauge of the track, and is of much superior location, and constructed in like manner as the Port Carbon road, having a double track the whole distance. This road terminates at Tuscarora, ten miles above Port Carbon, being at the head of the Schuylkill river. This road not being finished till late in the season, prevents them from making any dividend; but there is no doubt but that in the course of time it will well repay the outlay in its construction. From this road numerous small roads branch off from half a mile to two miles in length, being made generally at an equal expense between the owners of the mines and the company. In like manner with the Schuylkill valley road, an old road has been replaced with a new, under the name of

The Mill Creek Railroad—Being four miles in length, with a double track, and under the same management as the two former ones. This road forms a junction with the Port Carbon road about half a mile below its terminus, crossing the Schuylkill river to do so. This road has been finished since the two former ones, and for the time it has been in operation has done a large business. Thus have these three new roads been finished within the last year, and have opened a market to the coal dealers by railroad; and all this principally through the perseverance and energy of the Reading railroad company; although they do not have the sole benefit of the roads, owing to a provision in their respective charters, making it obligatory upon the company to transport the Navigation company's cars over the Schuylkill valley and Mill creek roads at a certain toll—as they have begun to furnish their patrons with cars in imitation of the railroad company. The Navigation company are pushing their work vigorously towards completion, although it is the opinion of many that the time calculated upon for finishing [the 1st of April] is too near at hand by two or three months. These two great rival companies, the railroad and canal, are still foolishly pursuing a course of bitter enmity towards each other, which has a tendency to do injury to both.—Owing to the great increase of business which has taken place here, and which is likely to continue, there is no doubt but that the canal with her 200 tons burden boats, and the railroad with her 80 engines and 4000 cars will have as much as they can both do; and it is only a wonder that the two companies do not see the great detriment to their interest in not coming to an amicable arrangement in relation to their tolls—the fluctuation of which now is of more damage to the operators than can well be imagined. It would be a source of gratification to the friends of both companies, if they would establish a certain permanent rate of toll by which they would make a fair profit, and create a stability in their proceedings which they have not at present. In the course of a few days we will have the reports of the respective companies, and interesting documents I have no doubt they will prove to be.

Your's truly, M.

We are greatly obliged to the writer of the preceding communication, and also for that on the "Pennsylvania railroads," which appeared in a previous number. They give what we have long sought, in relation to the numerous short, and branch railroads in different parts of the country, though we should like a more full account, giving the ruling grades, and the kind of power used on each—With this example before them, we hope other gentlemen residing near to such railroads, no matter how short, or having the facts in their possession, will communicate them to us to be *recorded* in our office, or for insertion in the Journal. If you would do it at all—and do it *well*—then do it NOW. Delays are dangerous.

AN APOLOGY is due our readers for the poor quality of paper used for the Journal for the past four weeks. It is in consequence of the want of *railroads* from this city to the *interior*. We shall endeavor to remedy the evil.

☞ We are obliged to omit one half of the article on the atmospheric railwaay, with a part of the engravings, until our next number.

For the American Railroad Journal

Bear Mountain Railroad, Pa.

D. K. MINOR—

Sir: In Mr. Spaulding's communication, addressed to me in the Railroad Journal of the 25th ult. is a "comparison of the difference in cost of constructing and working the Bear Mountain Road, in Pa." upon the two plans which he describes, in which he makes the cost by the "present arrangement" per annum,..... $ 2,568 00
And by the change in the grade, ... 15,876 00

Making the difference in favor of the "present grades" of..... $13,308 00

As Mr. S. has made this comparison for the purpose of enlightening me upon a subject in which I take no particular interest, inasmuch as it has nothing to do with the *general* merits of the project respecting which I was called upon to report, yet I will so far notice his statement as to put to him a few queries, which he can answer or not, as he may think proper.

1. Is it not proper to add a per centage for renewal, repairs and insurance on the $20,000 saved in the cost of the timber work of the Williams' Valley bridge?

2. Please explain how you make the cost of planes and fixtures and engines for elevating 540,000 tons of coal per annum 42 feet [for the purpose of breaking and screening the coal] only $2,000?

3. Is it not proper to add a per centage for renewal, repairs and insurance on the planes and fixtures and extra cost of engines?

4. As you have assumed in your estimate, that under a change in the grade, *horse* power must be used north of the southern entrance to the tunnel, should you not have made the dimensions of the tunnel to conform thereto, instead of supposing it to be "cut for three tracks," the center track being designed for "the passage of *locomotives* entirely through the mountain," a distance of 8,400 feet, or 1 3-5th miles, nearly?

5. In your estimate of the amount of motive power required to convey 540,000 tons of coal per annum, from the mines to the canal, a distance of 30 miles, you state that three locomotive engines, weighing each 15 tons, will be sufficient for the purpose, at a total annual cost of only $9,876 00, exclusive of oil and cotton waste, which are very small items, or less than *two cents* per ton for the whole distance, including the return of the empty cars! By what practical or theoretical data do you arrive at this conclusion, and what do you estimate the *gross* load in tons of an engine drawing 900 tons *nett*?

6. How do you arrive at the conclusion that *doubly* the amount of power, or *six* engines, will be required to convey the same tonnage over 28 1-2 miles of the road in consequence of the grade for 2 1-2 miles from the tunnel being reduced to a level, the residue of 26 miles to the canal remaining unchanged?

7. In your estimate you suppose that 440,000 tons of coal can be obtained annually from the south mountain, before therefore you can with propriety estimate for another 100,000 tons from the north mountain, is it not incumbent upon you to show, most conclusively, that the business of the company will *very soon* after the road is put in operation, exceed the amount first named of 440,000 tons? and in bringing the subject before the readers of the Journal, ought you not to have stated that I assumed in my report an annual business of only 300,000 tons? ought you not also to have stated that the greatest elevation of Williams' Valley bridge, under the "present arrangement," is 90 feet above the waters of the Wiconisco, and its length 2650 feet, and that by reducing the grade the greatest height will be only about 53 feet, and the length considerably lessened? also, that no change of location of the *centre line* of the road was suggested or contemplated in my report?

8. How much will the cost of the road be increased by building to the level grade at first, and afterwards raising it to conform to the inclination of 17 feet per mile?

9. Will you inform me how it happened that no more than 1200 feet of reservoir was planned and *contracted* for at the canal, and *when* it was that you discovered that such a reservoir was entirely inadequate to meet your own computation of the first year's business of the road?

If the above queries are satisfactorily answered by Mr. Spaulding, I may perhaps be disposed to propound some others equally pertinent; but it must be distinctly understood that in whatever I have said or may say, I reserve my opinion as to the propriety of making any, and if any, what change in the grade of the Bear Mountain road, until such time as it shall suit my convenience to be more explicit.

In doing this, I merely adhere to the position taken in my report, viz: that of having brought the subject to the notice of those interested, without recommending any particular plan to be adopted; a position which I trust will not be again *misrepresented* by Mr. Spaulding, who several times reiterates that I have *proposed* or recommended a specific change in the grade of the Bear Mountain road.

Yours, very respectfully,

E. F. JOHNSON.

Hunt's Merchant's Magazine.

The January number of this exceedingly valuable Magazine has been on our table for several days. It contains, as usual, much interesting and valuable information on a variety of subjects; and it ought to be, as we hope it is, extensively circulated in every city and village, and throughout the country generally. It is to the merchant, and business man, what an agricultural paper is to the farmer—and it should be as widely circulated, and as generally read, throughout the country, and by all classes of people, as are now the numerous and ably conducted agricultural journals of the day. There are several articles in this number to which we should like to call the attention of our readers, and especially to that upon the "Value

and Prospects of Life in the United States"; but we can neither afford the space, nor the time; especially as there is another article of great interest and value—and precisely in our line—by an able and indefatigable director in several of the Massachusetts' railroads, which we propose to give entire.

Of the "Merchant's Magazine," we desire again to say, that it should be in the hands of, and promptly *paid for*, by every merchant and business man in the country. The number before us commences the XIVth volume, which is strong evidence that it is justly appreciated; and we trust that its enterprizing proprietor has been richly rewarded for his efforts; and the more so, as we took the liberty, when consulted on the subject before it was commenced, to dissuade him from the enterprize, unless he had *capital to spend*. May it live and prosper a *thousand* years!

A New Daily Paper.

In no other manner, perhaps, than by the progress of the newspapers of a country, can we judge of the advancement of a people in intelligence and prosperity. In large cities, the birth of a new *daily* newspaper no longer excites surprize or remark. Nor, indeed, will it hereafter in our far interior and populous towns.

The new candidate, in this now numerous family, for favor, is the "*Daily Commonwealth*," published at Frankfort, Kentucky, No. 1, vol. 1, of which, dated January 1, '46, is now before us. It is printed in good, fair, clear type, and contains the governor's message and the first day's proceedings of the Kentucky legislature; of course very little else, except editorial remarks upon the message; in course of which the editor says, that

"The condition of public affairs is shown to be most happy. The amount of the state debt, instead of being increased, is reduced by the fiscal operations of the past year; the resources of the sinking fund have been ample to pay promptly and punctually the interest on the debt, without anticipating means; the avails of the treasury have been abundant to meet the ordinary expenses of the government, and leave an expected surplus on hand at the end of the next fiscal year; the receipts from taxes, from turnpike roads, from bank dividends and from rivers, have all been greater this year than heretofore; all going to show the solid prosperity and the felicitous condition of the commonwealth, and reflecting the highest praise upon the able and faithful agents to whom the administration of public affairs has been so wisely and happily committed."

We are truly gratified to learn that the state is in a condition so favorable. It is an indication that her citizens are abundantly able to undertake and carry through a system of railroad improvement, which will, in an astonishing degree, develope the vast resources of the state. There should be at least two important lines of road, if the lay of the land will admit of it, through the state, viz: from Lexington, east, to the mouth of Guyandotte, in Virginia—the road to Louisville will, *of course*, be completed—thus opening a great thoroughfare from the Atlantic to St. Louis, through the state, by which its citizens will participete in the golden streams which flow from travel; and another line from *some* point on this southwardly, to connect with the road *soon* to be constructed from the Georgia railroads to Nashville; or, perhaps, better still, with the Hiwassee road, at Knoxville, and thence to the Georgia works—thus opening a direct communication with the cotton growing region of Georgia and Alabama, where so much of the produce of Kentucky would find a good market; and in the same direction, a part of the state will find its natural outlet to the Atlantic.

These are works in which the people of Kentucky have a common interest, and which ought to be commenced without delay: and to which we desire to call their attention. These are works to the consummation of which we desire to see the attention of Kentucky's *able and distinguished son* directed with the same devotion and untiring energy that he has, for so long a period, exhibited in the advancement of the general and *universal* prosperity of our common country. Let *him* but take the *lead*, and the work will, at the commencement, be *half accomplished*. Kentucky, from being the *first born* of the union, and the *extreme outpost* of civilization—less than half a century ago—is now the eldest sister of a large family, and the *centre* of *twenty-eight* states. In another half century, however, she will be almost as near *the other* extreme in her relative position, and it is therefore of the utmost importance to her citizens that a portion at least of the *immense movement*, in a westerly direction, should pass over her territory, and leave its vivifying influences with her people. Let her noble son, we say, but step into the *front* rank, and bear aloft her banner, always among the first in every good cause, with the motto, "Kentucky, the first of the new states, let her ever maintain that relative position in her improvements," and there will be no difficulty in accomplishing not only these, but also many other works in connection with them. By doing this, he will erect a far more endurable monument to his own fame, than if it were of marble, or bronze. Let him do this, and *Kentucky* will have additional reason, if possible, to be proud of him.

Atmospheric Railway.

In accordance with our plan, we continue the subject of the Atmospheric railway; and give in this number a description of Clegg and Samuda's plan, as now in use on the Croydon line. For the accompanying description and illustrations we are indebted to that excellent work, the *London Railway Chronicle*; the editor of which appears to have taken great pains to understand the subject thoroughly, and also to place it before his readers in such a light as to enable them to understand and justly appreciate it.

The introductory remarks of the editor of that Journal are so appropriate, and at the same time so much in accordance with the opinions formed by us, though under much less favorable circumstances, to arrive at satisfactory conclusions, that we adopt them entire, with the single remark that our aim, in devoting so much space to the subject now, is to induce others—not to *believe* in, and *adopt* it—*but* to *investigate* and *understand* it, that it *may* be adopted, if found *more* suitable under any peculiar circumstances, in any particular place. And as there are several different plans now before the public, and others are sure to follow, we shall endeavor to place the whole matter in a position which will enable our readers to understand it, and keep pace with the improvements. We have omitted the first engraving, which shows the depot at ———, and the buildings in which are placed the stationary steam engine and air pumps which work the apparatus; and we have also omitted the carriage B, to the underside of which the *heating* apparatus, for cementing the valve is attached.

"The opening of the first atmospheric railway in England, for public traffic, is an event of such importance as to demand the careful and immediate attention of all railway shareholders and railway travellers. It is the commencement of a new system, which its advocates advance as calculated to supercede all other methods of railway transport; and even its inveterate opponents [if it have any] must admit that it is a new instrument of power, by means of which it is not unlikely that, under peculiar circumstances, and in new combinations, very important objects may be achieved.

"For ourselves, we rank neither with the headlong advocates nor the wholesale opponents of the system. We hail it as an admirable application of an elegant principle, the transmission of mechanical power to great distances by the medium of a vacuum. We admire it as an exquisite piece of modern mechanism, as a triumph of British skill over mechanical impossibilities. We would encourage to the utmost the practical trial of a gigantic experiment, which promises for us higher velocities, more frequent opportunities and cheaper fares than the existing modes of transit. We therefore desire for it from the public, the fullest, fairest, most patient and considerate trial; we claim for it every allowance for the difficulties of a new invention; and we would ask from our engineers a deliberate, systematic, self-denying attention to the progress of this great experiment of a new and powerful instrument, by means of which they may possibly be able to effect new and unheard of ameliorations in our railway system.

"We are not ourselves among those who are so sanguine as to consider it likely that the atmospheric tube is about to supercede the locomotive engine universally or even generally. It appears to us, that on a great multitude of the existing lines o railway the locomotive engine is much better suited to the wants of the existing traffic, than the atmos-

pheric or any other system of fixed power could possibly become. We are not among those, therefore, who fear the atmospheric as a system likely to deteriorate or to supercede the existing railways. On the contrary, we hail it as a valuable adjunct to existing lines, calculated, we think, if judiciously used, to enhance their value and extend their usefulness. It seems to us equally injudicious to propose it everywhere and to exclude it everywhere."

"The Croydon railway is one of those instances which, in our opinion, appears to be the best suited for the favorable application of the atmospheric system. The line is essentially a short traffic line—a suburban railway. It has trains every hour (or half hour) both ways, from eight in the morning till eleven at night; these are all light passenger trains, of nearly equal size, and of about ten carriages on the average. There are no night trains whatever. And thus a uniform stream of traffic flows along the line both ways nearly uninterrupted during nearly seventeen successive hours every day. There are also intermediate stations along the line, at which all the trains stop, and which are nearly at the regular intervals of 3 miles apart, being about the appropriate distance for the length most convenient for the atmospheric tubes, and for the distances from each other of the air-pumps and steam engines.

The merit of having made the Croydon Atmospheric railway, like the merit of having matured the invention, is a divided honor. It is well known that Mr. Clegg, a mechanician of acknowledged talent and ingenuity, is the inventor of that simple and beautiful *valve* which alternately opens as the train advances, and shuts when it has passed; giving us a tube air-tight when we want it to be so, and yet covering a slit 3 miles in length.—Those only who have used air-pumps and air-valves can appreciate the difficulty of such a problem. An air-valve over a slit of an eighth part of an inch in length is a troublesome enough affair to a philosophical experimentalist, but to use one in daily practice of 3 miles in length was left for the imagination of British inventors; we should rather say, not to their imagination to conceive, but for Mr. Clegg to conceive and actually to construct. We know that many other similar valves have been talked of or invented; but as yet we have seen nothing which equals in simplicity the simple flap valve; it has been the immediate cause of the success attending the invention—a success which has been attended with fewer of the failures of first trials than any other equally important invention of of which we have any recollection.

Of the success with which it has been introduced, we are obliged to say that much has been owing to the merit of Mr. Samuda and of his much regretted and talented brother.—Engaged as practical engineers in the construction of machinery, they had the merit of taking up the infant invention, and, in conjunction with Mr. Clegg, by contrivance and capital, carrying it out to a successful issue. Only those inventors who owe their past failures to the insufficient support and co-operation of their associates in business can understand how great to an inventor is the value of so cordial and persevering a coadjutor as Mr. Samuda has proved to Mr. Clegg. To Mr. Samuda, therefore, belongs the merit of bringing the invention forward and co-operating to mature it; and the pecuniary returns he is likely to derive from this source, although great, is not greater than his talent, enterprize and perseverance deserve.

The next party to whom the atmospheric system is indebted for the measure of success it has attained is unquestionably the Dublin and Kingston railway company and Mr. Bergen and Mr. Pim of that railway. We hardly think we are saying too much in asserting, that but for these gentlemen it would not now be in the state of maturity and popularity in which we find it. Mr. Pim especially is identified with the success of the system, and affords a favorable example of the extent to which an honest straight-forward Irishman will throw his whole heart into a cause he thinks a good one, even although, as in this case, he has no personal or imemdiate interest in the result. Mr. Pim is, if not the father, at least the godfather of the atmospheric railway. We hope he will find the reward he anticipates in the success of the atmospheric lines in which he has taken an interest; and his Bray line promises to fulfil his desires.

As to the immediate Croyden line itself, the merit of that is chiefly due to Mr. Wilkinson, the chairman of the Croydon company. His little line, the Croyden, is the grand trunk line of three railways—the Dover, the Brighton and the Croydon Proper. The short traffic of the Croydon Proper was found to be perpetually in the way of the long traffic; so much so, that the other lines were constantly talking of leaving it for some other less impeded avenue into London. This led Mr. Wilkinson to bethink himself of taking his short Croydon traffic out of the way of this long, toll-paying traffic. He resolved upon laying a single third line beside the old double line, so as to carry the sort of omnibus traffic in the vicinity of London and Croyden, quite out of the way of the through trains, a measure both of prudence and safety for both. He found that the advocates of the atmospheric system regarded it as peculiarly adapted to this short continuous light traffic, and to a single line of rails. He pondered and consulted and decided; and so Mr. Wilkinson is the inventor of the Croydon atmospheric line. We have no hesitation in saying, that if there be any one place better than any other for the successful application of the atmospheric system, the Croydon line is that place, and so far the experiment has been well devised and judiciously carried out.

We next come to those professional men whose duty it has been to carry this invention out in the best manner. Mr. Cubitt was the engineer employed for this purpose, and his well known skill was an ample guarantee to all who knew him, that under his direction the invention would have the best possible chance of success. And although he is not one of the wholesale advocates of the system, yet every one who has seen the work executed under his superintendence, must be aware that ample justice has been done by his judicious and thoughtful combinations.

Mr. Hutton Gregory is the author of the next class of engineering expedients by which this invention has been matured. His problem was to convert all the works of a double line into a triple line. All the bridges over the railways, and they are numerous, were to be altered from their old span to one wide enough for three lines of railway; the new line required at one place to be lowered, at another place to be raised—here to be diverted to the right, and there to the left; and all this to be done while all the trains of three railways were night and day traversing the line. That this has been done, accomplished in a manner that leaves nothing to be desired, and that it was accomplished without stopping a single train or occasioning a single accident, is giving great praise to Mr. Gregory's forethought, caution and professional skill; but it is not saying one word more than his great services to that company deserve.

The present atmospheric railway to Croydon, as it stands, is the result, therefore, of the labors of all these gentlemen. It is equal in every respect to the Dalkey line, and, in some respects, as much superior as a line should be that has had the advantage of all its predecessors' experience. The experiments on it have as yet gone on slowly, one thing at a time, and therefore we think wisely. Its powers are at least equal to carrying 40 tons of train at 40 miles an hour. Its inventors say it will take 50 tons at 50 miles an hour. We are contented, for our part, with the former, but shall be glad to see the latter. If the increased facilities can increase the traffic, so as to give a full train of passengers both ways every half hour, then the Croydon atmospheric will be as successful as a mercantile speculation as it is undobtedly is as a mechanical invention.

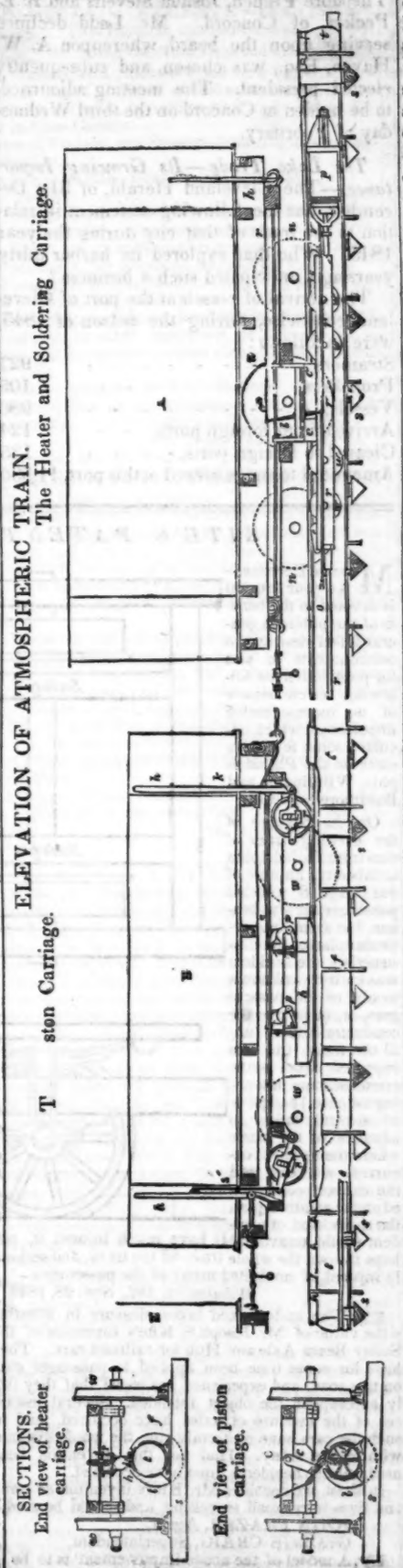
The engraving at the head of this notice shows the building which contains the stationary steam engine and air-puwps which works the apparatus. The train and tube are also visible. Before entering further on the illustration of the subject, it will be quite necessary for our readers to make themselves familiar with the form and construction of the carriages, piston, pipe and other apparatus: after which we shall the better explain their uses and objects. Their attention is therefore requested to the annexed engravings and the accompanying descriptions.

Our detailed Engravings represent the first two carriages of an atmospheric train: A is called the piston carriage, and occupies the usual place of a locomotive engine, being that to which the power is directly applied, and which draws all the carriages of the train after it; B is the second carriage of the train, and it also carries part of the atmospheric apparatus. All the other carriages of the train are just the ordinary carriages of a railway, from which they differ in no respect, but are hooked on to carriage B as they would be to the tender of a locomotive engine. In all respects, therefore, A and B on the atmospheric system may be considered as taking the place of the locomotive and its tender in the ordinary system, with this difference only, that they both carry passengers as well as machinery. C end view of piston carriage; D end

view of heater carriage. The arrow shows the direction in which the train is moving. We shall now describe them separately.

The Piston Carriage and its Appendages. *p* is the travelling piston, placed in the atmospheric pipe below the carriages. The pipe is here represented in section from *t* to *t*, in order to show the piston, etc. The piston-rod, *r r r*, at the middle, is firmly attached to the piston carriage by the connecting plate *c' c'*, which is also firmly bolted to the frame of the carriage; *l* is a little lever projecting through connecting plate, for opening and shutting the valve *v* at stopping or starting. To one end of this lever is attached the small rod *c v*, connecting it with the valve *v*. At the other end is the rod *c r*, to which is attached the handle *h*, under the immediate control of the guard or conductor. By means of this handle the guard can at any time, when necessary, open the valve *v*, and allow air to pass into the pipe from behind and thus destroy the vacuum; *c c* two steel plates, better known by the name of coulters, which serve the purpose of gradually opening the long leather valve (see large view of pipe;) *w w w w* are little wheels inside the pipe for raising and lowering the long leather valve on the top of the pipe, so as to let the connecting plate *c' c'* pass into it. These wheels are attached to the piston-rod *r r r r*, which is here flattened out into a double plate for that purpose. By such an arrangement the valve is raised and lowered without any violent motion, or in the least injuring the peculiar qualities of the valve. The piston-rod *r r r r* is made alike at both ends, in order that the piston *p* may be removed from the one end and put on the other without having to detach the whole apparatus from the connecting plate *c c*. For that purpose the small rod *c v*, connected to piston-valve *v*, is made alike on each side of lever to facilitate the operation. The carriage is then in a position to return. *n n n* are the wheels of the carriage A, which run upon the rails in the usual manner. The middle one is made larger merely for the purpose of keeping the axle out of the way of the connecting plate.

The Heater Carriage and its Appendages. *h* is the copper vessel called the heater, which is kept filled with burning charcoal. To the bottom of this vessel is attached a brass plate, tappered away towards the ends. This plate is made to pass along the side of the long valve, and squeeze the composition up against pipe, and so form an air-tight joint ready for another exhaustion. *p p* two bell-crank levers, attached at one end to the rod *c*, while the other supports the heater in position by means of pins on each side. The rod *c* traverses the carriage both ways where it is attached to the lever handles *h h'*. By working either of these handles the heater can be at once raised from off the surface of the pipe, which is necessary at stations. One handle is sufficient for this purpose, but two are put for convenience, should the person in attendance be in either end of the carriage; *r r* are two rollers, technically called closing-wheels; these wheels are made to run on top of the long valve, and press it to the surface



of the pipe. The degree of pressure is regulated by the lever handle *h*, under the command of the conductor. Attached to the wheel is a small spring to ease the motion, should any difference in height take place, allowing it to play up and down in the slot of the bearing-plate. One or both of these wheels can be used at pleasure, and accordingly one may be hung up out of the way, as shown in the engraving, by means of a small rod *s*, suspended to a hook on side of carriage. *w w* are the wheels of the carriage B, which run upon the rails in the usual manner; B part of the carriage of a regular train, in every respect similar to those on other railroads.

The Atmospheric Pipe, *t t t*, is shown partly in elevation and partly in section. It lies between the rails, and is firmly bedded on the wooden sleepers sunk in the ground; *s s s s s*, the wooden sleepers, of a triangular shape, according to Mr. Cubitt's practice.—Those shown in section are those to which the pipe is attached, while the others carry the chairs into which the rails are put, as is common to all railways. *f f* are strong ribs cast with pipe, strengthening it against the pressure of the atmosphere acting from the outside.

Debt of Kentucky.—According to the Message of Governor Ousley, the entire indebtedness is $3,138,956, as per annexed extract from his Message:—

"The present funded debt of the state, including every description of bonds heretofore issued and not cancelled, amounts, as before remarked, to $4,408,400, and may be classified as follows:—

5 per cent. bonds, payable 35 years after date,	$ 165,000
5 per cent. bonds, payable 30 years after date,	450,000
6 per cent. bonds, payable 30 years after date,	3,579,000
6 per cent. bonds, payable 6 years after date,	100,400
6 per cent. bonds, (for repair of railroad,) payable 6 years after date,	84,000
Money borrowed from bank of Louisville,	30,000
Total amount,	$4,408,400

To this amount should be added $1,056 of the railroad and internal improvement certificates or scrip, issued by the Northern bank, still outstanding and redeemable by the state,—making the aggregate state debt, at present, $4,409,456.

But in connection with this subject, it is proper to remark, that the state is in possession of means by which part of the debt might be extinguished without burthening the people with taxation. The state holds in her own name bank stocks, $1,270,500. This sum deducted from the entire amount of debt, as above stated, leaves $3,138,956, which may be considered as the actual burthen of debt on the state. But when we consider that, to meet this indebtedness, the state has a very large amount of stock in the various turnpike roads, and owns the entire

Kentucky and Green river navigation, which are yearly becoming more productive to the state, and therefore more valuable; and that the state also owns the railroad, which is in successful operation, and yielding a handsome rent to the state—it will be seen that the indebtedness may be considered as greatly diminished by these vast assests, and all fears of oppression of the people, by reason of their state debt, dismissed as groundless and illusory. This gratifying fact furnishes a conclusive answer to such persons as are disposed to reproach those who were instrumental in carrying out the internal improvements which are adding so much to the wealth, convenience & comfort of the people."

Debt of Maryland.—Gov. Pratt says in his message that

"The sinking fund on the 1st December, 1844, amounted to $1,276,306 79; and on the first of December, 1845, to $1,404,030 28. It is progressively increasing by the quarterly re-investment of the interest accruing on it; and its operation has demonstrated its adequacy to secure the citizen and creditor of the state by redeeming the principal of the public debt within the periods limited in the appropriation laws.

"The public creditor, with the *certain* assurance of the future prompt payment of the accruing interest, will, I am persuaded, be well satisfied to fund the arrearage of interest upon such terms as will comport with the ability of the state, and at *any* rate of interest you may deem *equitable* and just.

"The entire debt of the state, bearing interest amounts to the sum of $11,986,784 98"

He says further that, "If, after a thorough investigation of the subject, you should determine that the state *shall* resume payment on the 1st day of October next, it will be necessary to fund the interest inclusive of the quarter ending on the 1st of July, 1846.

"In view of the anxiety which will exist on the part of the tax payers to avail themselves of the privilege of paying in cupons or certificates of interest, (a privilege which they are aware must be denied so soon as you decide to resume the payment of the current interest,) I do not think the present arrearages of interest will be much increased. Suppose the arrearages of interest on, and including the interest of the 1st July, 1846, would amount to the sum of 1,500,000 dollars; this funded at 3 per cent. would increase the current interest from that date by the sum of 45,000 dollars; and if you should decide to pay off the principal, thus funded, in 20 years, it will be necessary to provide annually the further sum of 75,000 dollars; which sums added to the current interest on the present funded debt, would make the sum of 715,421 20 dollars to be raised annually to meet the demands upon the treasury."

Election of Directors.—The Concord and Portsmouth railroad company had a large and spirited meeting of the subscribers to the stock at the Franklin house, Portsmouth, on Tuesday, the 30th December, when the following named gentlemen were chosen directors: Alexander Ladd, Richard Jenness, W. P. Jones and John P. Lyman, of Portsmouth; Theodore French, Joshua Stevens and R. E. Pecker, of Concord. Mr. Ladd declined serving upon the board, whereupon A. W. Haven, Esq., was chosen, and subsequently elected president. The meeting adjourned, to be holden at Concord on the third Wednesday of February.

The Lake Trade.—Its Growing Importance.—The Cleveland Herald, of 31st December, has the following statement in relation to the trade of that city during the year 1845. Who that explored its harbor thirty years ago, anticipated such a business?

The arrival of vessels at the port of Cleveland, coastwise, during the season of 1845, were as follows:

Steamers,	927
Propellers,	105
Vessels,	980
Arrived from foreign ports,	124
Cleared to foreign ports,	135
Amount of tonnage owned at this port,	11,530
Number of vessels, including steamers and propellers, owned at this port,	84
Number of seamen employed,	638

MANUFACTURE OF PATENT WIRE Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by JOHN A. ROEBLING, *Civil Engineer*, Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 2v19 1y

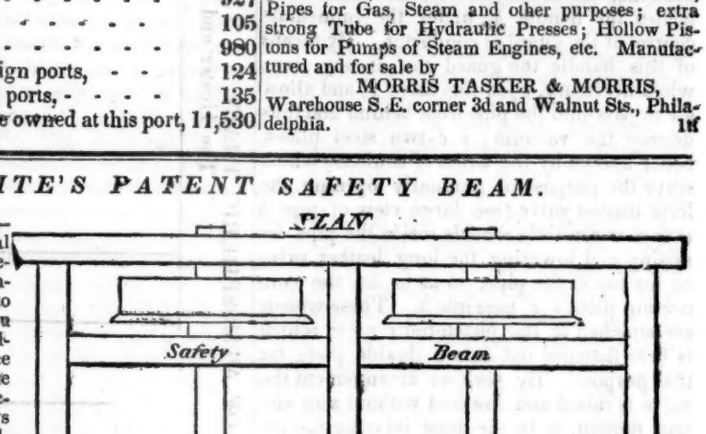
TO LOCOMOTIVE AND MARINE ENGINE Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by MORRIS TASKER & MORRIS, Warehouse S. E. corner 3d and Walnut Sts., Philadelphia. 1f

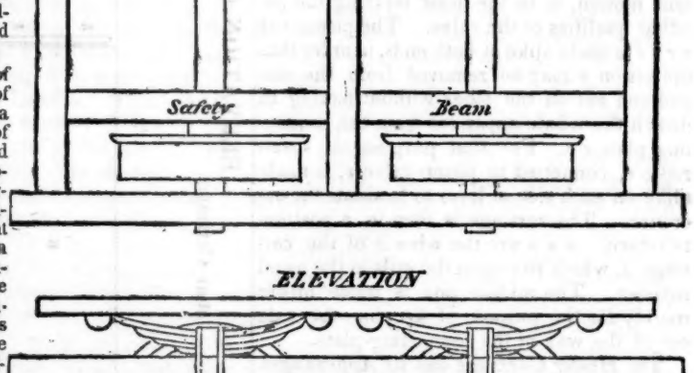
KITE'S PATENT SAFETY BEAM.

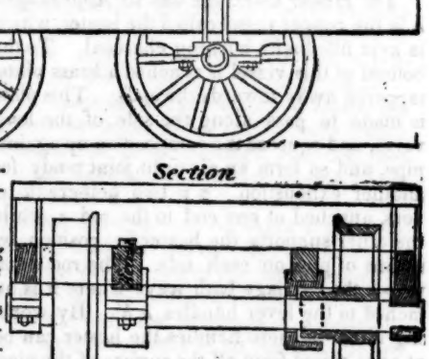
MESSRS. EDITORS.—As your Journal is devoted to the benefit of the public in general I feel desirous to communicate to you for publication the following circumstance of no inconsiderable importance, which occurred some few days since on the Philadelphia, Wilmington and Baltimore railroad.

On the passage of the evening train of cars from Philadelphia to this city, an axle of our large 8 wheeled passenger car was broken, but from the particular plan of the construction, the accident was entirely unknown to any of the passengers, or, in fact, to the conductor himself, until the train, (as was supposed from some circumstances attending the case,) had passed several miles in advance of the place where the accident occurred, whereas had the car been constructed on the common plan the same kind of accident would unavoidably have much injured it, perhaps thrown the whole train off the track, and seriously injured, if not killed many of the passengers.

Wilmington, Del., Sept. 28, 1840.







☞ The undersigned takes pleasure in attesting o the value of Mr. Joseph S. Kite's invention of the Safety Beam Axle and Hub for railroad cars. They have for some time been applied to passenger cars on this road, and experience has tested that they fully accomplish the object intended. Several instances of the fracture of axles have occurred, and in such the cars have uniformly run the whole distance with entire safety. Had not this invention been used, serious accidents must have occurred.

In short, we consider Mr. Kite's invention as completely successful in securing the safety of property and lives in railroad travelling, and should be used on all railroads in the county.

JOHN FRAZER, Agent,
GEORGE CRAIG, Superintendant,
JAMES ELLIOTT, Sup. Motive Power,
W. L. ASHMEAD, Agent.

☞ A model of the above improvement is to be seen at the New Jersey railroad and transportation office, No. 1 Hanover st., N. York. ja45

BOSTON AND MAINE RAILROAD. Upper Route. Boston to Portland via, Charlestown, Somerville, Malden, Stoneham, South Reading, Reading, Wilmington, Ballardvale, Andover, North Andover, Bradford, Haverhill, Atkinson, Plaistow, Newtown, Kingston, East Kingston, Exeter, South Newmarket, Newmarket, Durham, Madbury, Dover, Somersworth, South Berwick, North Berwick, Wells, Kennebunk, Saco and Scarborough.

Winter Arrangement, 1845 & 6. On and after Monday, October 20th, 1845, Passenger Trains will run daily, (Sundays excepted,) as follows, viz.

Leave Boston for Portland at 7½ a.m. and 2½ p.m. Leave Boston for Great Falls at 7½ a.m., 2½ p.m. and 3½ p.m. Leave Boston for Haverhill at 7½ a.m., 2½, 3½ and 5 p.m. Leave Portland for Boston at 7½ a.m., and 3 p.m. Leave Great Falls for Boston at 6½ a.m., 9½ a.m. and 4½ p.m. Leave Haverhill for Boston at 6½, 8½, and 11 a.m., and 6½ p.m.

Special Train.—A special train will leave Boston for Andover at 11½ a.m., and Andover for Boston at 3½ p.m.

The Depot in Boston is on Haymarket Square.

Passengers are not allowed to carry Baggage above $50 in value, and that *personal* Baggage, unless notice is given, and an extra amount paid, at the rate of the price of a Ticket for every $500 additional value. CHAS. MINOT,

October 20, 1845. 43 1y *Super't.*

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engagep in manufacturing Spring Steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent,*

j5a3 Albany Iron and Nail Works, Troy, N. Y.

A. & G. RALSTON & CO., NO. 4 South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz:
180 tons 2½ x ½ inch Flat Punched Rails, 20 ft. long.
25 " 2½ x ½ " Flange Iron Rails.
75 " 1 x ½ " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures. 1tf

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works beingextensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,

a45 Paterson, N. J., or 60 Wall street, N. York.

FOR SALE AT A SACRIFICE—A LOCOmotive Engine, 4 wheels and Tender. Cylinders 10 in. dia., Stroke 16 in., Cylinders inside of smoke box. Weight of engine, with wood and water, about 9 tons. This engine and tender are new and of the best materials and workmanship. If required, would be altered to a 6 wheeled engine.

Also, 1 20-horse High Pressure Steam Engine.
2 8-horse " " "
1 Upright Hydraulic Press.

All of which will be sold low, on application to

T. W. & R. C. SMITH.
Founders and Machinists,

May 12tf Alexandria D. C.

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES. This Road in connection with the South Carolina Railroad and the Western and Atlantic Road now forms a continuous line of Railroad of 360 miles from Charleston to Cartersville, two miles west of the Etowa River in Cass County.

Rates of Freight, and Passage from Augusta to Cartersville.

On Boxes of Hats, Bonnets, and Furniture per foot.....15 cts.
" Dry goods, shoes, saddlery etc., per. 100 lbs. 85 "
" Sugar, coffee, iron, hardware, etc. " 70 "
" Flour, bacon, mill machinery etc. " 33½ "
" Molasses, per hogshead $9; salt per bus...22 "

Passengers $9 50; children under 12 years of age and servants, half price.

Passengers to Atlanta, head of Ga. Railroad, $7.

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Augusta. J. EDGAR THOMPSON,

Ch. Eng. and Gen. Agent.

Augusta, Oct. 21 1845. *44 1y

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee. G. A. NICOLLS,

ja45 *Reading, Pa.*

GEORGE VAIL & CO., SPEEDWELL IRON Works, Morristown, Morris Co., N. J.—Manufacturers of Railroad Machinery; Wrought Iron Tires, made from the best iron, either hammered or rolled, from 1½ in. to 2½ in thick.—bored and turned outside if required. Railroad Companies wishing to order, will please give the exact inside diameter, or circumference, to which they wish the Tires made, and they may rely upon being served according to order, and also punctually, as a large quantity of the straight bar is kept constantly on hand.—Crank Axles, made from the best refined iron; Straight Axles, for Outside Connection Engines; Wro't. Iron Engine and Truck Frames; Railroad Jacks Screws; Railroad Pumping and Sawing Machines, to be driven by the Locomotive; Stationary Steam Engines; Wro't. Iron work for Steamboats, and Shafting of any size; Grist Mill, Saw Mill and Paper Mill Machinery; Mill Gearing and Mill Wright work of all kinds; Steam Saw Mills of simple and economical construction, and very effective Iron and Brass Castings of all descripions.t

ja451y

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,

ja45 N. E. cor. 13th and Market sts., Philad., Pa.

NORWICH AND WORCESTER RAIL Road. On and after May 22, 1845, Trains will leave as follows, viz:—

Accommodation Trains, daily, except Sunday. Leave Norwich, at 6 a.m., and 4½ p.m. Leave Worcester, at 10 a.m., and 4½ p.m.

☞ The morning train from Norwich, and the morning and evening trains from Worcester, connect with the Boston, Western, and Hartford and Springfield railroads.

New York Train, via Steamboat. Leaves Norwich for Worcester and Boston, every morning except Monday, upon the arrival of the boat from New York, about 2 a.m. Leaves Worcester for Norwich and New York, at 5½ p.m., daily, except Sunday.

New York Train, via Long Island Railroad.—Leaves Norwich about 3 p.m., for Worcester and Boston, daily, except Sunday. Leaves Worcester for Norwich and New York, at 7½ a.m., daily, except Sunday, and arrives in Norwich at 9½.

Freight Trains. Daily, except Sunday.

☞ Fares are less when paid for Tickets, than when paid in the cars.

EMERSON FOOTE,

32 1y Superintendent.

LAWRENCE'S ROSENDALE HYDRAulic Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

WESTERN AND ATLANTIC RAILroad. The Western and Atlantic Railroad is now in operation to Marietta, and will be opened to Cartersville, in Cass county, on the 20th of October—and to Coosa Depot, (formerly known as Borough's,) on the 20th of November.

The passenger train will continue, as at present to connect daily (Sundays excepted) with the train from Augusta, and the stage from Griffin.

CHAS. F. M. GARNETT.

43 *Chief Engineer.*

LITTLE MIAMI RAILROAD.—DIStance 65¼ Miles. Fare, $1 50. From 1st November to 1st March Passenger Trains leave Cincinnati for Xenia at 11 o'clock, A.M.

Returning, leaves Xenia at 8½ o'clock, A.M.

Freight Trains run daily, Sundays excepted.

At Xenia, Passenger Trains connect with daily lines of stages to Columbus, Wheeling, Cleveland and Sandusky city.

W. H. CLEMENT,

1y 1 Supt. and Engineer.

RAILROAD IRON.—THE "MONTOUR Iron Company," Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to MURDOCK, LEAVITT & CO.,

Agents.

Corner of Cedar and Greenwich Sts. 48 1y

C. J. F. BINNEY,

GENERAL COMMISSION MERCHANT and Agent for Coal, and also Iron Manufactures, etc.

No. 1 City Wharf, Boston.

Advances made on Consignments.

Refer to Amos Binney, *Boston.*
Grant & Stone, } *Philadelphia.*
Brown, Earl & Erringer, }
Weld & Seaver, *Baltimore.*

December 8, 1845. 1m 50

BACK VOLUMES OF THE RAILROAD JOURNAL for sale at the office, No. 23 Chambers street.

NEW YORK AND HARLEM RAILROAD Company.—Winter Arrangement.

On and after November 3d, 1845, the cars will run as follows:

Leave City Hall for Yorkville, Harlem, Morrisiana, and Williams' Bridge,

7 30 A.M. This train leaves 27th st.
7 30 " Does not stop this side of Harlem.
10 30 " Does not stop this side of Harlem.
11 30 "
1 P.M. Does not stop this side of Harlem.
2 30 "
3 30 " Does not stop this side of Harlem.
4 30 "

Leave White Plains for City Hall—8·10, 11·10 a.m, and 1·45, 4·10 p.m.

Leave Tuckahoe for City Hall—8·20, 11·20 a.m., and 1·55, 4·20 p.m.

Leave Williams' Bridge for City Hall—8·45, 11·45 a.m. and 12·45, 2·15, 3·45, 4·45, and 5·45 p.m.

Leave Morisiana for City Hall—8, and 9·10 a.m., and 12·10, 1·10, 2·40, 4·10, 5·10, and 6·10 p.m.

The freight train will leave City Hall at 12·45 p.m. and leave White Plains at 11·10 a.m. All freight must be at the City Hall between the hours of 10·30 a.m. and 12·30 p.m. The White Plain trains will stop, after leaving the City Hall, only at the corner of Broome street and the Bowery, Vauxhall Garden and 27th street.

An extra car will precede each train, 10 minutes before the time of starting from the City Hall, and will take up passengers along the line.

The City Hall and 27th street line will run every 6 minutes from 7·30 a.m. to 8 p.m.

The City Hall and 27th street night line will run every 20 minutes from 8 to 12 o'clock.

On Sundays the trains will be regulated according to the state of the weather. 1y 46

THE LONDON RAILWAY RECORD, Edited by Mr. JOHN ROBERTSON, A. M., (connected from the commencement with the Weekly Railway press of England.)

The *Railway Record* is acknowledged to be the leading English Railway Journal, and is published twice a week in London, namely on Wednesday and Saturday. It contains copious and correct reports (by special reporters) of all railway meetings in the United Kingdom; ample Share Lists and Traffic Tables, showing the length, cost, capital and selling prices in the principal markets, with Editorial articles on the leading Railway topics of the day. The *Railway Record* contains also, a complete resume of French, Belgian and other foreign Railway affairs.

Subscriptions 13s. per quarter, to be transmitted in advance to Messrs. Dawson and Sons, Ca[illegible] st. London. Office 153 Fleet street, London. 46

BOSTON COURIER, DAILY, SEMI-Weekly and Weekly.

The *Daily* edition of the Courier, presents to merchants and others, an extensive medium of advertising. The circulation of the *Semi-Weekly* Courier (published on Mondays and Thursdays) is believed to be more extensive than that of any other similar Boston Newspaper. This publication embraces all the reading matter of the Daily, the Foreign and Domestic Markets, Review of the Boston Market, Prices current, and Ship News, prepared with great accuracy. The *Weekly* Courier contains as much of the matter of the daily as can be crowded into a sheet of the same size, without ship news, prices current or advertisements.

Our extions to obtain and publish authentic information on all topics proper for the columns of a newspaper,—the state of trade, the prices of merchandize, the current news of the day, and the political movements in the various sections of the country—will not be abated. The marine department of the Courier has been inferior to none in copiousness or accuracy of detail, and it will be our endeavor maintain its reputation in this respect.

TERMS OF SUBSCRIPTION.

For the Daily Courier, for one year, in advance $8,00
For the Semi-Weekly Courier, for one year.. 4,00
For the Weekly Courier, for one year..... 2,00

JOSEPH T. BUCKINGHAM.
EBIN B. FOSTER.

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 32 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13 1y

CENTRAL RAILROAD—FROM SAVANnah to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—

On weight goods generally... 50 cts. per hundred.
On measurement goods ..... 13 cts. per cubic ft.
On brls. wet (except molasses and oil).....$1 50 per barrel.
On brls. dry (except lime)... 80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery..... 40 cts. per hundred.
On hhds. and pipes of liquor, not over 120 gallons.....$5 00 per hhd.
On molasses and oil.....$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission. THOMAS PURSE,
40 Gen'l. Sup't. Transportation.

LEXINGTON AND OHIO RAILROAD. Trains leave Lexington for Frankfort daily, at 5 o'clock a.m., and 2 p.m.

Trains leave Frankfort for Lexington daily, at 8 o'clock a.m. and 2 p.m. Distance, 28 miles. Fare $1·25.

On Sunday but one train, 5 o'clock a.m. from Lexington, and 2 o'clock p.m. from Frankfort.

The winter arrangement (after 15th September to 15th March) is 6 o'clock a.m. from Lexington, and 9 a.m. from Frankfort, other hours as above.
35 1y

KEARNEY FIRE BRICK. F. W. BRINLEY, Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

James P. Allaire, } New York.
Peter Cooper, } New York.
Murdock, Leavirt & Co. } New York.
J. Triplett & Son, Richmond, Va.
J. R. Anderson, Tredegar Iron Works, Richmond, Va.
J. Patton, Jr. } Philadelphia, Pa.
Colwell & Co. } Philadelphia, Pa.
J. M. L. & W. H. Scovill, Waterbury, Con.
N. E. Screw Co. } Provicence, R. I.
Eagle Screw Co. } Provicence, R. I.
William Parker, Supt. Bost. and Worc. R. R.
New Jersey Malleable Iron Co., Newark, N. J.
Gardiner, Harrison & Co. Newark, N. J.

25,000 to 30,000 made weekly. 35 1y

RAILROAD IRON AND FIXTURES. The Subscribers are ready to execute orders for the above, or to contract therefor, at a fixed price, delivered in the United States.

DAVIS, BROOKS & CO.,
je 30 Wall st., N. York.

BOSTON AND PROVIDENCE RAILroad. Passenger Notice. Winter Arrangement. On and after Monday, Nov. 3, the Passenger Trains will run as follows:

For New York—night line, via Stonington.—Leaves Boston every day, but Sunday, at 4½ p.m.

Accommodation trains, leave Boston at 8 a.m. and 3½ p.m., and Providence at 8 a.m. and 3½ p.m.

Dedham trains, leave Boston at 9 a.m. 3, 5½ and 10 p.m. Leave Dedham at 8 and 10½ a.m., and 4½ and 7 p.m.

Stoughton trains, leave Boston at 12 m. and 4 p.m. Leave Stoughton at 8·20 a.m. and 2½ p.m.

All baggage at the risk of the owners theneof.

N.B. The last train to and from Boston and Dedham, will be omitted in case of a severe snow storm. W. RAYMOND LEE, *Sup't.* 31 1y

BRANCH RAILROAD and STAGES CONnecting with the Boston and Providence Railroad.

Stages connect with the Accommodation trains at the Foxboro' Station, to and from Woonsocket. At the Seekonk Station, to and from Lonsdale, R. I. via Pawtucket. At the Sharon Station, to and from Walpole, Mass. And at Dedham Village Station, to and from Medford, via Medway, Mass. At Providence, to and from Bristol, via Warren, R. I.—Taunton, New Bedford and Fall River cars run in connection with the accommodation trains.

NEW YORK AND ERIE RAILROAD LINE. For Middletown, Goshen, and intermediate places. Two daily lines each way, as follows:

For passengers, the new, and commodious steamboat St. Nicholas, Capt. Alex. H. Shultz, will leave the foot of Duane street daily, [Sundays excepted,] at 7½ o'clock, A.M., and 5 o'clock, P.M., through in five hours. Returning, the cars will leave Middletown at 6, A.M., and 4½, P.M. For further particulars inquire of J. Van Rensselaer, Agent, corner of Duane and West streets,

H. C. SEYMOUR, Superintendant.

Stages run from Middletown daily, in connection with the afternoon line, to Bloomingburg, Wurtsboro, Monticello, Mt. Pleasant, Binghampton, Owego, Port Jervis, Honesdale Carbondale, etc.

On Monday, Wednesday, and Friday, to Dundaff, Montrose, Friendsville, Lenox, Brooklyn, etc., etc. 31 1y

BALTIMORE AND SUSQUEHANNA Railroad. The Passenger train runs daily except Sunday, as follows:

Leaves Baltimore at 9 a.m., and arrives at 6½ p.m. Arrives at York at 12¾ p.m., and leaves for Columbia at 1½ p.m. Leaves Columbia at 2 p.m., and leaves York for Baltimore at 3 p.m. Fare to York $2. Wrightsville $2 50, and Columbia $2 62½. The train connects at York with stages for Harrisburg, Gettysburg, Chambersburg, Pittsburg and York Springs.

Fare to Pittsburg. The company is authorized by the proprietors of Passenger lines on the Pennsylvania improvements, to receive the fare for the whole distance from Baltimore to Pittsburg. Baltimore to Pittsburg.—Fare through, $9 and $10.

Afternoon train. This train leaves the ticket office daily, Sundays excepted, at 3½ p.m. for Cockeysville, Parkton, Green Springs, Owings' Mills, etc.

Returning, leaves Parkton at 6 and Cockeysville and Owings' Mills at 7, arriving in Baltimore at 9 o'clock a.m.

Tickets for the round trip to and from any point can be procured from the agents at the ticket offices or from the conductors in the cars. The fare when tickets are thus procured, will be 25 per cent. less, and the tickets will be good for the same and following day any passenger train.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

DAVIS, BROOKS & Co., 30 WALL ST. Have now on hand and for sale,

200 tons 2½ x ½ inch Flat punched Rails, Bars 18 feet each.
100 tons Heavy Edge Rails. 90 tons per mile.
30 tons 2½ x ½ inch Flat Rails.

ALSO—A STEAM PILE DRIVER, built by "Dunham & Co." which has never been used, and cost originally $5000. s20 2m